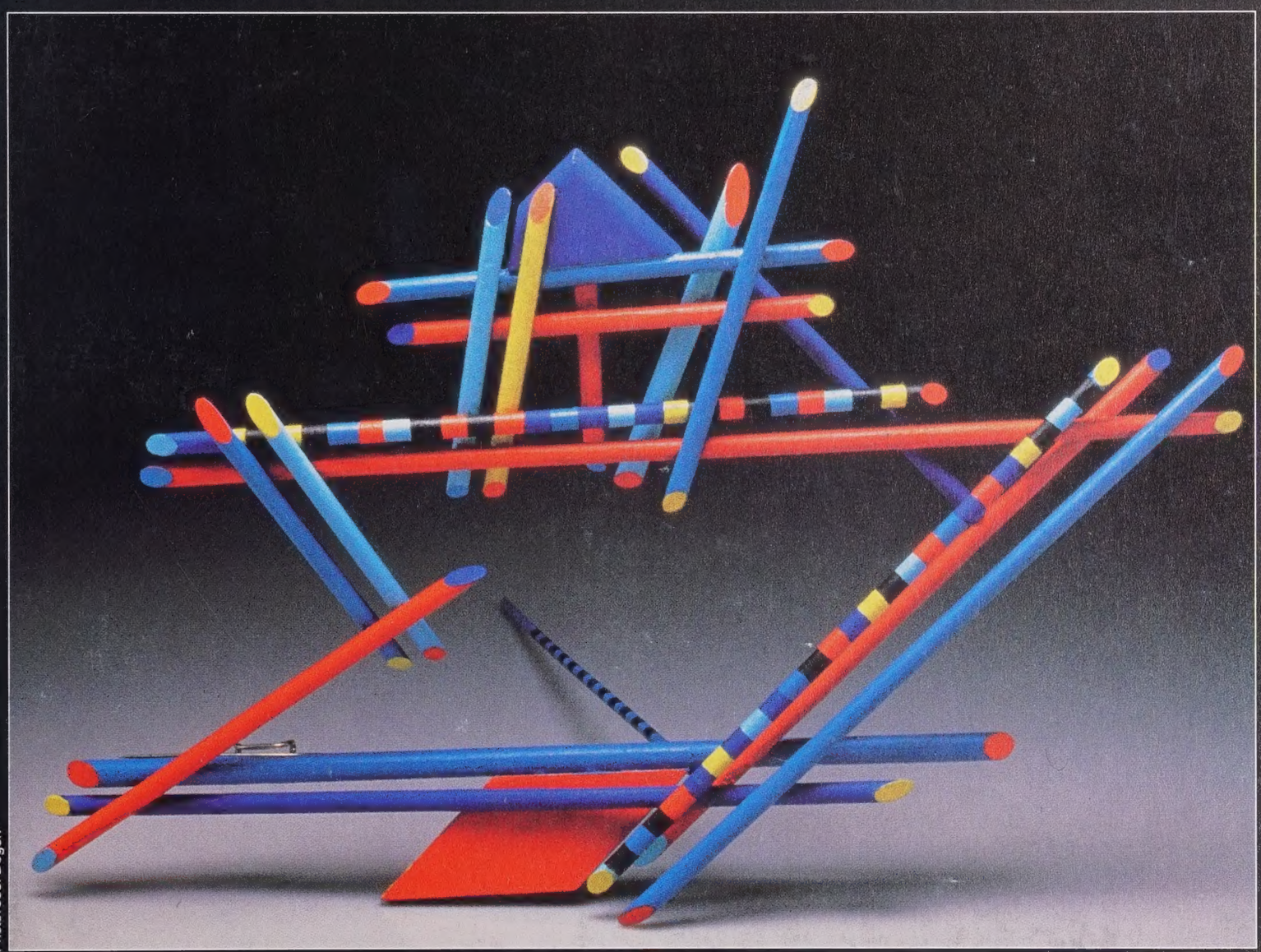
Metalsmith

Summer 86 Volume Six Number Three $6

William A. Neumann: A Tribute
Student Projects of Exploration
Metalsmith's Guide to Arizona
Beyond the Bench 5
Marjorie Schick



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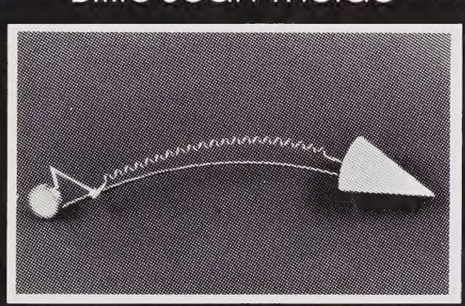

"Anxiety," Brooch; sterling silver, plastic, 6×1×.5".

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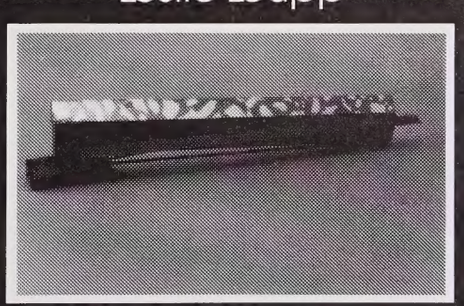

Brooch; wood, gold leaf, 6½×1¾×¾".

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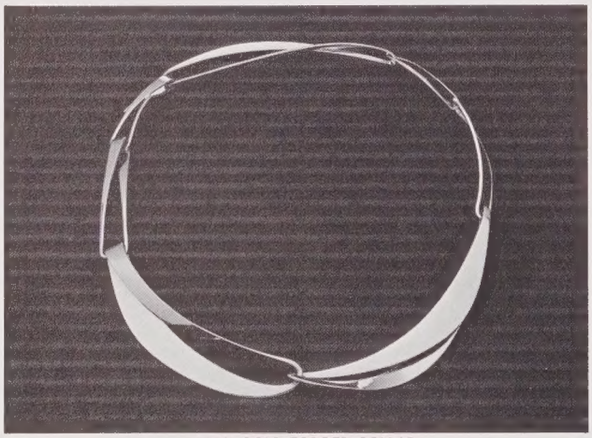

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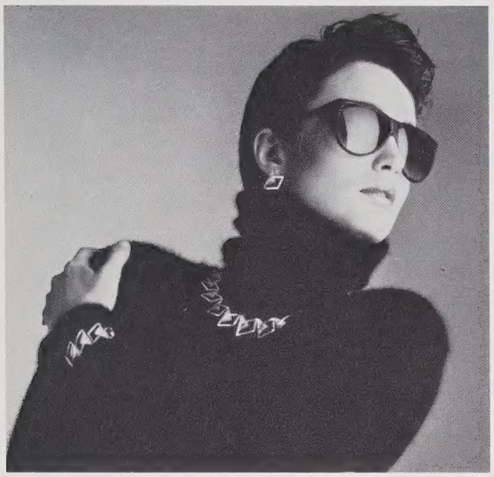

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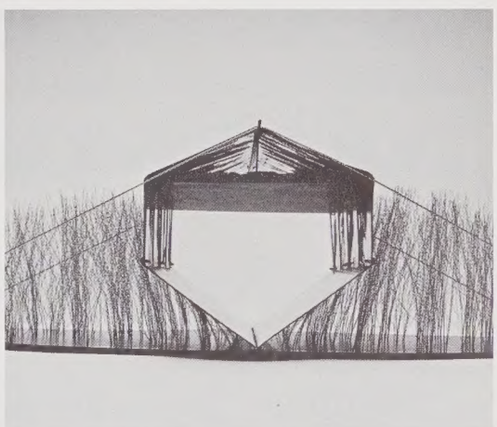

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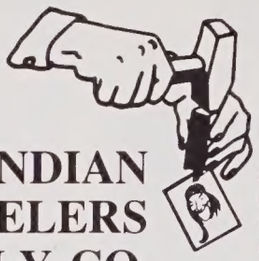

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Editorial

I recently returned from giving a lecture at the Nova Scotia College of Art and Design. The occasion afforded me the opportunity to review the history of the Society of North American Goldsmiths (SNAG) as well as our publishing program, which celebrates its first decade this year.

I recalled that the group of North American goldsmiths who met in November of 1968 to discuss the forming of an organization were college trained. They understood the need for a professional organization to encourage scholarship, technical advancement, education and esthetics. In retrospect, it is curious that this expansive organization, SNAG, embracing the wide spectrum of the metalsmithing and jewelry community, should have germinated within the spirit of academia.

In surveying the 20-odd issues of *Metalsmith* over the last five years, I noticed that the concerns of esthetics and professionalism in academia recur time and time again. The definition of craft in the larger world of art; the history and documentation of the field; future directions of research; the importance of student work all continue to inform academic dialogue as they had in the early days.

At Nova Scotia, as at other schools I visit, I am continually asked: Why hasn't craft developed a theory? Is the avant-garde in craft on a par with the avant-garde in painting? Shouldn't there be more interdisciplinary discussions through publications? Who are schools graduating, artists or technicians? Should a school emphasize conceptualism or practicality in its teaching philosophy? These issues, which seethe within academia, continue to have broad ramifications for the community as a whole.

In this issue, we present two articles on the subject of education. We hope that these articles will open the door to the ideas, debates, anxieties, problems, exploration and experimentation that are integral to the daily running of the many metals programs in North America. We also hope that by opening the pages of *Metalsmith* to this dialogue that the sharing of concerns and experiences will lead to solutions and innovations on a community-wide basis.

The first article, appearing on page 10, is a commentary by Jamie Bennett, professor at SUNY, New Paltz, who questions the advisability of pushing students into the commercial arena too early. While many students would like to test their designs and skills in the "real world," Bennett sees a danger in the loss of spontaneity, inquiry and daydreaming that only the classroom studio can afford. Bennett contends that this dilemma ultimately affects the teacher, who faces the dichotomy of selling work and preaching less mercenary principles to his students and is thereby relegated to the platitude: "Do what I say, not what I do."

Also in this issue, we are inaugurating a series called "Projects and Explorations: Student Work." Our concept is to solicit from students all over North America exploratory solutions to problems posed by noted metals professors. The projects will range from practical to whimsical, from jewelry to performance. Through this series we hope to illuminate the creative process, the free pursuit of ideas—formal, conceptual and expressive—without the pressure of commercial acceptance, competition or critical judgment. The first project assigned by Bruce Metcalf is on the subject of housewares. The provocative nature of the resultant interpretations caused *Metalsmith* design director Marty Moskof to remark: "What's curious is that none of them look like housewares."

I hope to see as many of you as possible at the SNAG conference in Flagstaff to talk about *Metalsmith* as well as the issues and concerns of the community we represent.

New Policy at Renwick?

As we go to press, we have learned that the status of the Renwick Gallery, is undergoing reexamination. After 15 years of exhibition and education programs devoted solely to craft, the Renwick may now assume a new role. According to Roger Kuhn of the James Renwick Collectors Alliance, "Following a change in the leadership of the Renwick's parent in 1982, the Renwick lost internal support. Recently, its exhibition program has been brought almost to a standstill, and proposals have been made by various Smithsonian officials for alternative use of the Renwick's building . . . In June, Lloyd Herman, the Renwick's Director, sensing a lack of support for his program, resigned . . . The future of the Renwick Gallery—and more fundamentally, of contemporary craft at the Smithsonian—now rests largely in the hands of the Institution's newly appointed Assistant Secretary for Museums, Tom L. Freudenheim."

While a committee of outside experts is now advising Mr. Freudenheim on the future of the Renwick, we strongly support the autonomous development of the Renwick as a center for the exhibition, study and collection of contemporary American craft. Such an intensive program is mandatory at a time when craft is emerging as a viable field with an identifiable history and theory. To subsume craft into the larger context of American art would, we feel, deter its recognition and preservation, which at this junction are vital.
—SB

Letters

Many letters received are of interest to the entire readership. Unless stated otherwise, all letters received may be included in the "Letters" section. Address letters to: Sarah Bodine, Editor, Metalsmith, 1 Penn Lyle Road, Princeton Jct., NJ 08550. Letters should be signed and a return address given. The editors reserve the right to edit for publication.

Dear Editor:
This letter is a composite response to Vanessa Lynn's fine, informative and timely two-part article "Getting Repped" (Winter/Spring 1986). Her advice was generally positive; we would like to mention some of the pitfalls a fledgling jewelry designer/businessperson can encounter both with reps and "inhouse accounts" —a *caveat vendor,* if you will.

Unfortunately, some of the people who purport to represent us seem to be engaged more in their own power trips than in promoting satisfying and financially rewarding relationships. We range from machines to dilettantes in their estimation, expected on the one hand to alter orders on short notice and deliver "tomorrow," while simultaneously being unneedful of monetary compensation for that work. Each small conflict is an isolated event that has never before occurred in their experience; they imply that it is our _____ (inefficiency, workmanship, unrealistic expectations . . . fill in the blank) that precipitated the problem. They don't seem to realize that we talk to one another, comparing experiences and evaluating *them*, also.

Buyers/reps present a very convincing story when they sign on a "new talent" or give interviews to the press. Did the reps Lynn talked to tell her the rate of turnover in their "stables?" One said she gave an artist up to a year to succeed in her writing (wholesale) orders worth $2000 a month. What percentage of her people do that? Do they stay with her five years, three? Why then is she advertising in *The Crafts Report* for new jewelry designers? She ought to be deluged with referrals from friends of happy past current consignees. Another gallery advertised for jewelry (among other things) two months running last summer. When approached with samples, the director wouldn't even look, said the ad was a "mistake."

Certain dealers have long-standing reputations for mistreating artists, but they still manage because of their desirable location to fill their display cases with the work of the naive and optimistic. Perhaps the PR value offsets the grief.

Three areas stand out among recurring concerns: payment, exposure and theft. Fully 60% of the complaints we hear involve money. Even with a written contract promising monthly updates and payment within 30–60 days of delivery, checks can be agonizingly slow to appear. Honest communication can do much to alleviate misunderstandings here; a brief phone call or note detailing unforeseen events makes waiting more acceptable. We, however, should not always have to be the note-writers and long distance call-placers. Certain that we have shipped high-quality pieces on time, why must we send three statements, registered copies of invoices they lost and appear finally in person to *beg* for our money?

Regarding marketing: Lynn covered the subject of territorial exclusivity well, stressing the importance of protecting personally cultivated accounts. Assuming that one has reached agreement on that aspect of "exposure," we recommend visiting the gallery or showroom or sending a friend to check up on the presentation. It is disheartening to find one's jewelry badly displayed, crucial pieces missing or worse, not visible at all. No matter how distinguished the reputation of the owner/buyer, the business's daily functioning is only as good as its staff, their dedication and knowledge. Can employees explain the difference between a pin and a penanular brooch? Can they distinguish between brass and gold plate, glass and enamel, wood and plastic and discuss use and care information with potential clients? Don't laugh; this is a major re-sale point.

There are two kinds of theft that the beginning production jeweler should be aware of: Theft simple, or the disappearance of an actual piece left on consignment or as an in-shop sample, either through negligence or loss in transit. Having an accurate inventory list, a contract clearly identifying responsibility, a terrific rapport with one's UPS driver and a good lawyer should diminish conflict in this unfortunate event. More insideous and unsettling is the theft of ideas and designs. When you open yourself to "the market," you create numerous opportunities to be ripped-off, which you have to accept with equanimity or you will spend all your time in negative thought. It is generally accepted that the big costume jewelry houses send spies to trade shows such as JA, FAE and Pret with the sole purpose of lifting good designs, altering them slightly and cheaply producing them by the thousands for the mass market. More galling, however, is outright imitation by a colleague, in direct competition with you or a rep, caster or plater, who permits a beautiful piece to travel outside his/her shop for cheap reproduction. These outrages are not as rare as we would wish. Unfortunately, there is little that can be done legally; we are presumably inspired to greater creativeness, outdistancing the imitators by at least a season or two.

A carefully drawn contract should be the solution to many of these potential woes. Lynn was told that existing contracts were "too personal" to share. We wonder whether the "standard contract" soon to be available from Accessories Marketing Representatives Association is an outgrowth of the idea floated by NYC rep Judith Feldman in the *November, 1985* issue of *Accessories* magazine. In that interview she suggested that reps need to organize to defend themselves against unscrupulous artist/suppliers. There would be a monthly up-front fee for the privilege of being represented, say $100, before the work even began to be marketed. We don't know what monetary disappointments Feldman, et al may have suffered, but this looks like

continued on pg. 60

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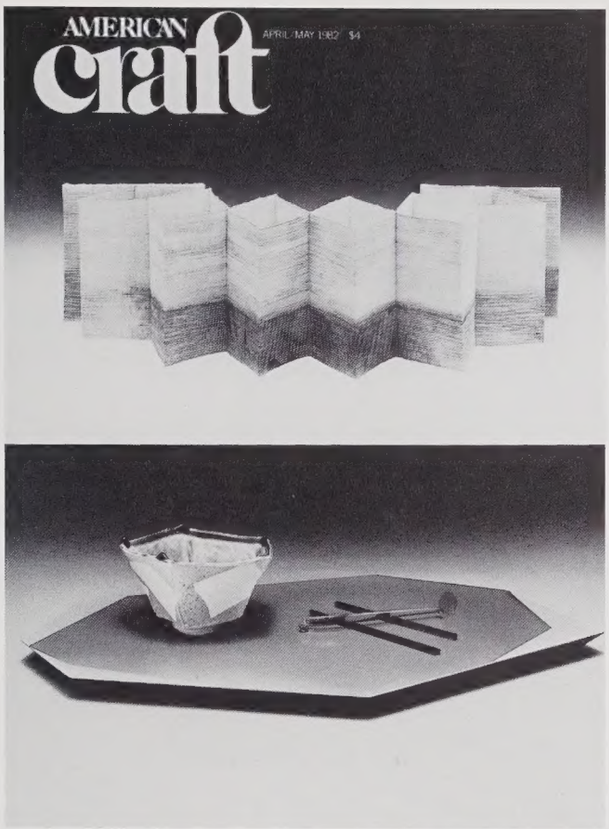

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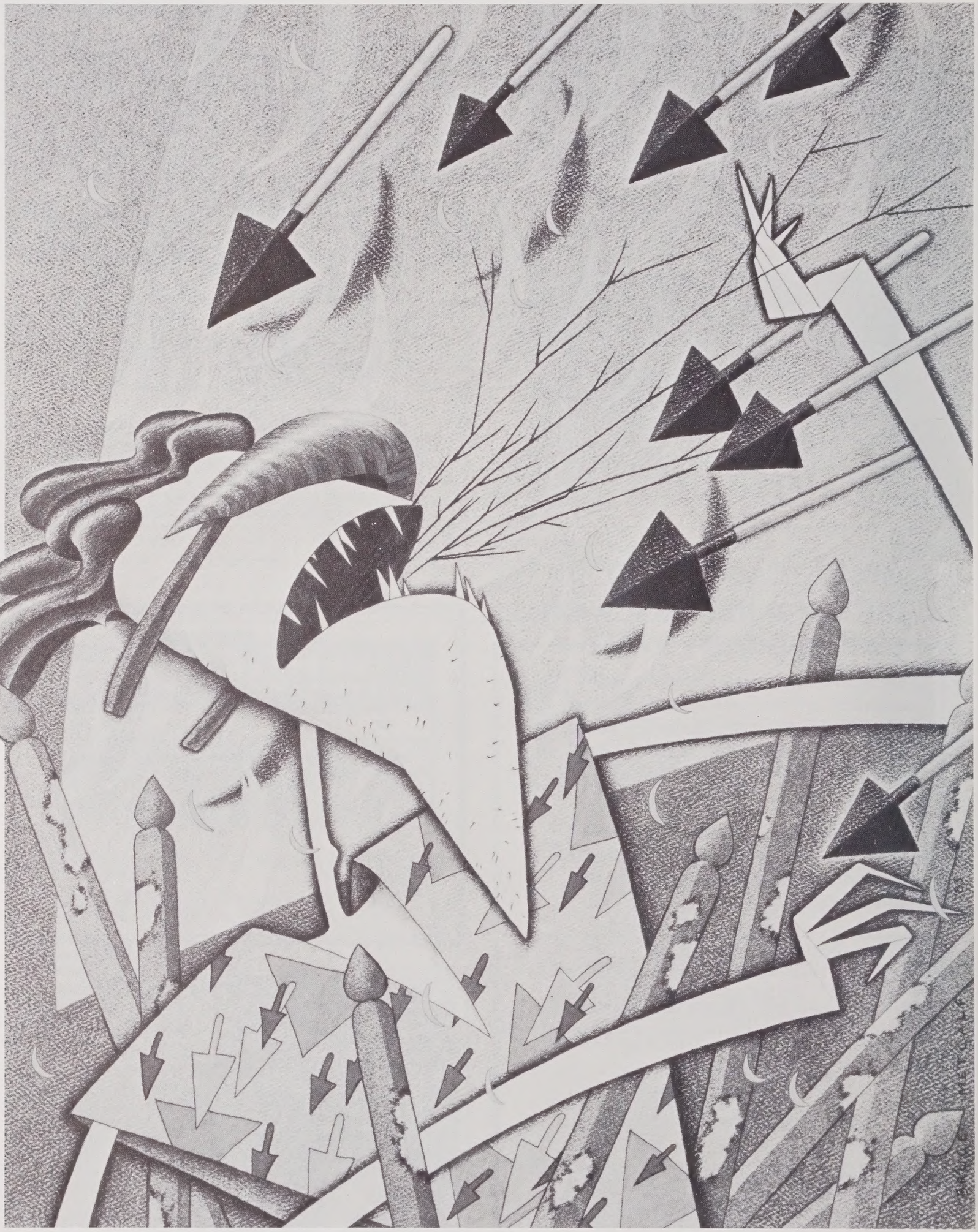


Opinion

The EGO and the $D

by Jamie Bennett

The following essay is witness to a growing concern over the relationship of academic training with the marketplace. By raising such issues, we hope the pages of Metalsmith *will foster dialogue on the concerns and aspirations of the educational community.*

Whenever I bemoan my trials as an artist, I find it consoling to lay blame on my alter ego, the teacher. Surely, the teacher in me has to be draining off a bit of energy, a small chunk of creativity that belongs to the artist. I must keep this guy in check. Then, I reconsider this unlikely marriage. It can work when nurtured with respect for the relative importance of both roles. I feel best when my teaching invokes a pure infusion from the sensations and substance of making art, a direct pour, trying somewhat desperately to give a sense of the creative act, its anxieties, doubts and the bliss of inspired making. The more sensitive we are as teachers to the creative impulses we have as artists, the stronger our students' work becomes. Somehow, though, there seems to be a good deal more than artistic communion creeping into the classroom these days.

On a good day, we have all said: "Had a really good discussion yesterday with Charlie." What we mean is, we experienced our primary responsibility as teachers; we encouraged creative exploration and, "I think he understood what I was trying to say." It is an exhilarating feeling. What would make sense, then, is that whenever we say or do in relation to the student should reinforce that "really good discussion." We begin to realize that on those special days the relationship is strengthened by inspiration and information. The artist half of us is sensitive and confident, acting as a role model who, via the teacher half, shares technical and creative insights.

So, what could possibly sneak into the classroom that could hinder the opportunity for positive development? There are many things which at first glance seem innocent enough. For instance, what possible harm could there be in encouraging our students to participate in juried or invitational exhibitions at commercial galleries? I think there could be some real harm done to our primary responsibility of encouraging creativity. Sure, it's good to give students a taste of reality, but I've come to think of such shows as a distraction that is not in support of "really good discussions." Professor Stanley Lechtzin, in the catalog introduction to the "Third National Student Metal Invitational" at Tyler School of Art in 1972, suggests that the student show acquaints "people both inside and outside the field with the vitality of metalsmithing programs in colleges and universities today." As a student during the early 70s, I recall student shows as being particularly significant and inspiring. Not only did these exhibits act as an introduction into the metal community, but they also acted as an honest sampling of the styles and the energies of various programs. It was in this context that I met and became aware of the work of many of my peers, such as Gary Griffin, Bruce Metcalf, Tony Lent, Leslie Leupp, Randy Long and Jem Freyaldenhoven. The work was occasionally naive, frequently untempered by professionalism, yet provocative.

The environment or context is a very important factor in how a student grows in his work. What is correct for the studio/classroom—exploration, trial and error, dead ends and unrehearsed proclamations—may be incorrect for the context of the commercial gallery, where consistency, resolve and reliability are primary concerns. When one is professional and has developed the maturity to evaluate appropriate representation, and has taken work to a degree that justifies representation, then the gallery, shop or retailer is an appropriate context for that work. There is no inherent conflict with what either the gallery wants and needs and what the artist seeks. But what of the student? Should they be pushed precipitously into the marketplace, facing the anxiety of the sale before even they have a clear set of values for their work? We should realize that the creative act is a fiction. If we change context and prematurely force students to discuss their work in market terms, the considerations for the making of creative metal become realistic rather than artistic. In consequence, we sacrifice a great deal in exchange for practical matters.

In many shows I've seen, I couldn't help but wonder how many students have put aside experimentation in order to meet the perceived criteria for inclusion in a commercial jewelry gallery? What worries me more is how many students are coaxed into thinking of the making of jewelry in a businesslike manner rather than as artistic undertaking. Sure, there are a few students who enter metalsmithing with a marketing strategy, but for the most part the majority who enter the field want to "make things" first, market them later.

It is inevitable that the teacher, with all the best intentions, projects some of their own professional anxieties and decisions onto the student. Here is where it is important to realize our dual nature as artist and educator. Perhaps everything we do and every decision we make as an artist or designer is at times too complex to be swallowed whole by a student, who might still be trying to figure out what tip to use to solder a joint. If we think of ourselves only as artists, rather than artist/teachers, for a minute, we realize as professionals we are forced to face the dragon alone, in a constant state of juggling a formidable pile of responsibilities. Without a doubt, this is a test of our emotional and creative fortitude.

This assumes, of course, that creative achievement is our goal, and freedom from constraint is a necessity to work. But what if it isn't our goal? What if reception and commercial or academic success is what we more highly prize? Then, purely from a practical standpoint, we would want to remove as much of the creative doubt and insecurity as possible in order to achieve success. We would pursue strategies that promise positive response, developing or seeking out systems which can be organized around that intent. For the student who continuously asks, "What am I going to do?" we restrain creative exploration because it may slow down the route to the marketplace. As "making it" becomes more important, our suggestions and advice are based not on creative potential, not esthetic challenge, but on what will be well received by the buying public.

As the practicality of the sale is prioritized over creative exploration, the student's work becomes impeccably well groomed, with a disposition toward the highly stylized rather than the individual stamp. At the extreme, the work begins to look like it could be coming out of a marketing program rather than an art program.

If we were to take the priority of tangible goals one step further, the other area we should target for the student is the palliative of technical proficiency. An easy way to assuage creative doubt is to pile on procedures and projects where information is provided and answers given. Once the system is established, we merely measure achievement on the grounds of how well students mimic an acceptable model. Slides are shown as "good examples." Procedures are provided for how to start (cut out) and finish (polish up) the object—tangible process. All this leads to, of course, is another "good example."

I do not think that anyone would argue against the need for structure and order in our teaching methods. However, there is some disparity in the manner in which we deal with creative freedom. It's very hard to determine where structure ends and freedom begins, particularly when we face the same struggle as artists. But, perhaps we are allowing our own guidelines to restrict the outcome of the student's work.

It's easy to see how the teacher's perception of what constitutes achievement and how that information is passed on to the student can have great influence in the classroom. The teacher's influence can either be imposing or restrained; it can free the individual or consolidate the pack. Certainly we acclaim the student who offers the prospect of individual aptitude, but inevitably the teacher can slant the student's work by issues that are discussed or censored, what relevant criticism is withheld or offered and the degree of emphasis placed on creative invention.

Where then do we set values for the young metal artist? Do we model our methods of teaching after our own resolve as professionals, even if it includes a degree of compromise and a restraint on creative freedom? We know that the faculty of imagination must be fed. This is made difficult enough, considering how our society thoroughly distorts any clear sense of what is significant and what is frivolous. Maybe critic Douglas Davis is correct when he suggests that "nothing in the private capitalist system can escape commodity status," but we can still insist that student work not be conceived as such. Surely, we want student work to be clear to the viewer, but an eager student can misconstrue this to mean that we have to condescend to the consumer. The danger, of course, is that we no longer create, we scheme.

At its best the classroom/studio should be a fluid environment, unconstrained by rigid systems with given results and unlimited by predetermined opportunities of employment. This calls for a greater responsibility on the part of teacher and student alike, not to destroy the structures on which we must build but to deconstruct the preconceived formula to commercial success.

Jamie Bennett is a professor of metalsmithing at the State University of New York at New Paltz. His work is represented by the Helen Drutt Gallery in Philadelphia and the Clark Gallery in Boston.

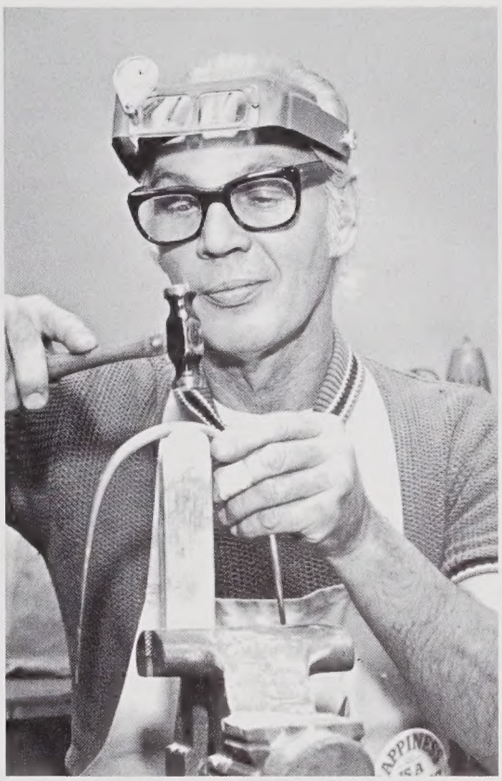
Hank Gets Anxious
drawing by Bruce Metcalf, 15 × 12", 1983

WILLIAM A. NEUMANN:
A Tribute

by Eunice R. Michaels

Excitement, tension and anticipation electrified the atmosphere at the Cleveland Institute of Art one day in May, 1950. The judging for the most coveted senior awards was about to take place. Suddenly, a clumsy newspaper critic backed up to view a painting and crashed right into the carefully arranged display of William Alan Neumann's ceramics and sculpture, flinging several to the floor. Stunned, he mumbled apologies to the thunderstruck artist while rescuers dashed off to glue the pieces together. Only insistent persuasion from his friends kept him from withdrawing from the competition. Five hours later the jury completed its wrangling and decided to award William Neumann the substantial Agnes Gund traveling scholarship, the top honor. It was the first time a ceramist (or any craftsman) had ever won the Gund.

Thus, the outstanding artistic career of the 26-year-old veteran was launched. He had served in the Signal Corps, fought in the European theater and, following his discharge, attended the Wharton Technological School in London. He went to Dallas, Texas, where his family had moved and met and married Martha (Marty became well known to all Society of North American Goldsmiths members later for her many years of dedication and expertise as the Executive Secretary-Treasurer).

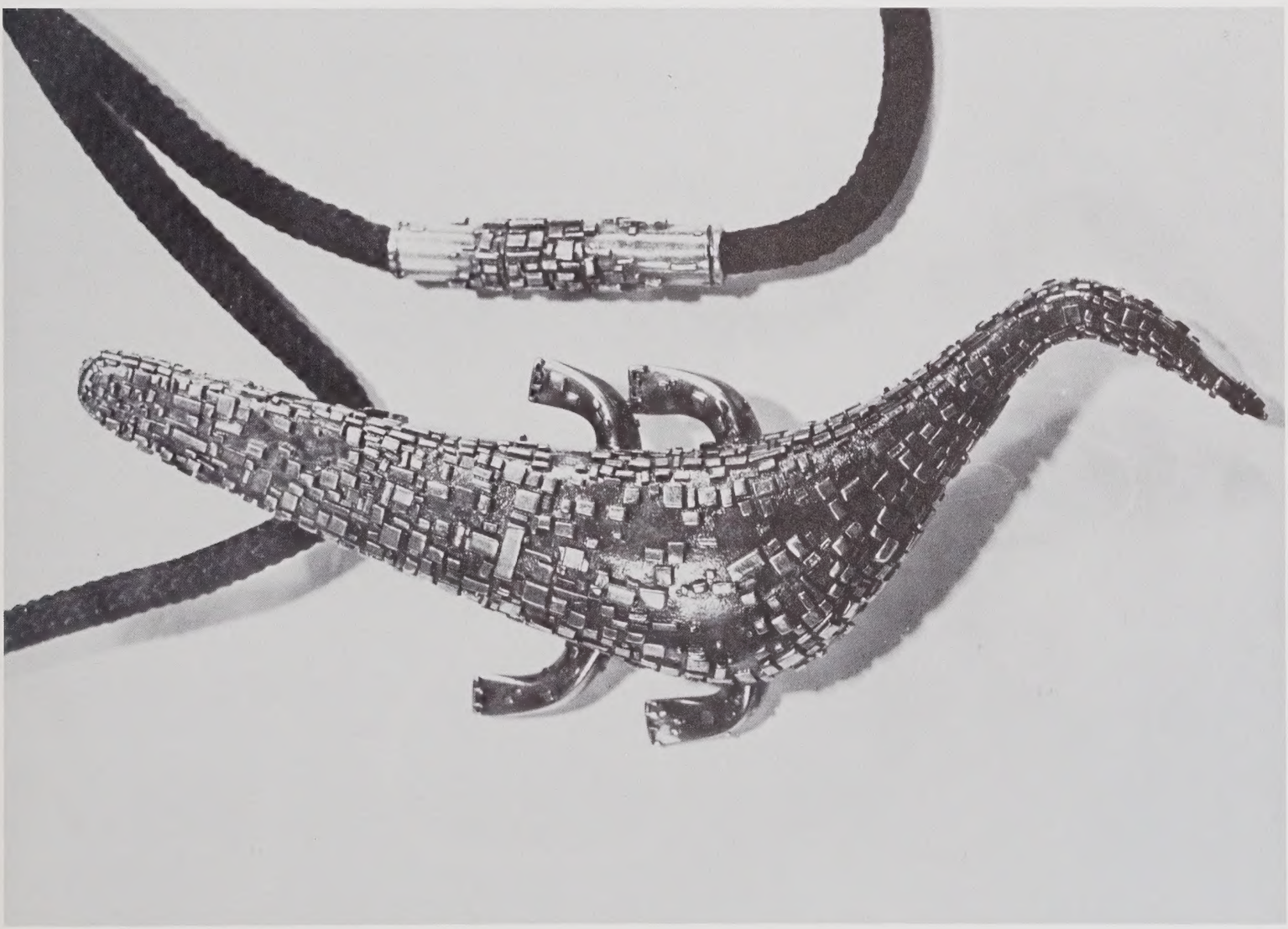


Then Bill began to study in earnest, returning to his native Cleveland to spend five busy years at the Cleveland Institute of Art. A double major in Industrial Design and Ceramics earned him a diploma, with a minor in sculpture. He went on to earn a B.F.A. as a sculpture major with a strong minor in metalsmithing, studying holloware with Fred Miller and jewelry with John Paul Miller (who first sparked his curiosity about granulation).

Several art critics at the time of the graduate exhibition lauded the surface treatments and forms in Bill's work, while noting his prolific versatility in tempera and airbrush renderings for industrial design.

Bill traveled to Bornholm and Copenhagen, Denmark, then Göteborg and Stockholm, Sweden to do research, study and work in ceramics and sculpture, "producing

Left: *Pendant*, silver with gold granulation, cloisonné enamel, leather neck band. **Below:** *Aligator pendant, silver granulation*



much with great skill," it was noted in reviews of his one-man show. On to Uppsala, then Finland, then home to Dallas to set up a teaching studio. Statewide awards and purchase prizes at the Dallas Museum of Fine arts were granted for ceramics, sculpture, wood and numerous works in silver holloware.

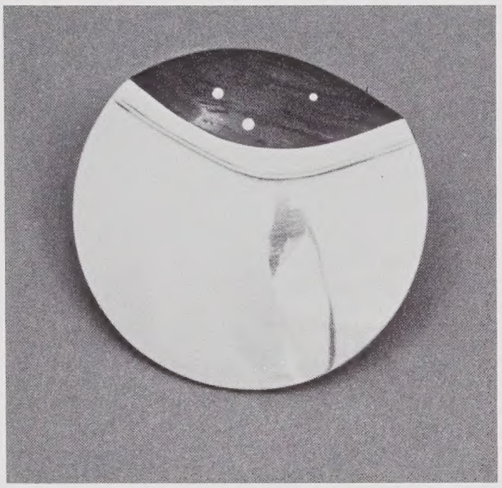
In 1952, the Cleveland Institute of Art invited him to teach Advanced Design, Sculpture and Ceramics. I learned from students of that era that he is remembered as brimming with enthusiasm and energy, generous in spirit, one who celebrated, was visibly excited by, indeed *lived* the successes of others, both students and peers, in a genuine and heartfelt way. These same qualities seem to have transcended the years, a recurring theme permeating not only his teaching and interaction with others but also reflected in the zeal for his own work, a labor of love. He shared equally in his student's joy of discovery, and his example buttressed and gave strength to those with whom he worked.

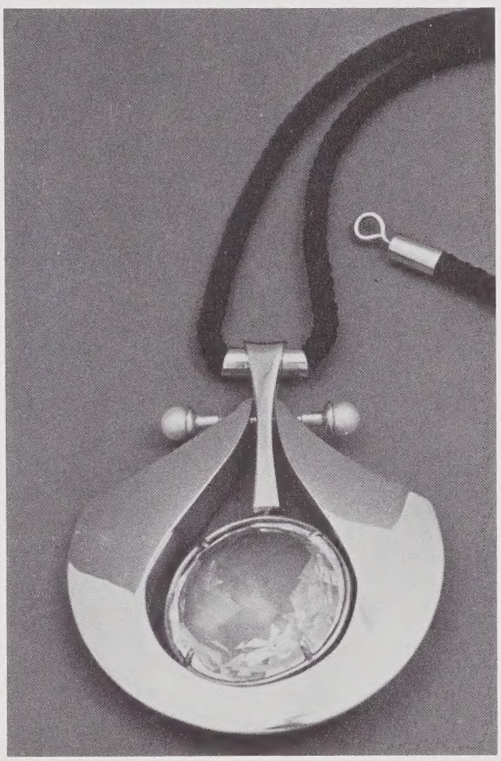
During this period he also worked as an Industrial Designer with Scherr & McDermmott, Inc. of Akron where he "did" commercial interiors, packaging, product design and displays. This experience was just the stimulus he needed to launch his own design firm, Dimensional Design, Inc. of Cleveland, with a sizable staff. As president and art director, he produced design programs for a wide variety of corporations, such as: product brochures and package design for tool-and-die, chemical and automotive industries and for Cedar Point; displays for Timex; plant layouts and product designs for Ohio Bell Tel. Co. and Inland Steel ore carriers, ad infinitum, all with models and formal presentations. After eight years, he sold his interest in the company to his associate. There was more to life in the art world, he decided.

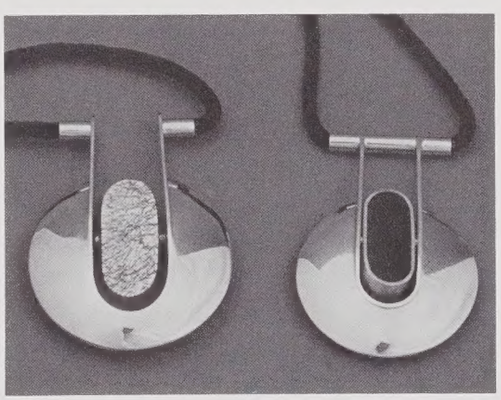
Meanwhile, he was annually juried into the Cleveland Museum of Art May Show, winning purchase prizes and other awards. The Ceramic National Exhibition, Syracuse, NY, honored him for four years, and international recognition continued regularly.

While teaching at Kent State University as guest artist in 1966, he received an unparalleled opportunity for an enriching experience. Throughout his life he was exhilarated by challenges and this certainly was one: Resident Design Director, Aid to International Development, Colombia, S.A. There he established a design center where he redesigned old Colombian handcrafts and designed new ones to introduce cottage-industry artisan products into the world market.

As he traveled the country, he studied and became increasingly fascinated with pre-Colombian gold, and in particular, gold granulation. He would explain granulation as "An ancient soldering process used by metalsmiths before tin and zinc were discovered. . . . Those people were barely past the neolithic age—only rock polishers; they







Opposite page: *Pendant*, mokume gane, ebony, pearls, 4 × 5″, 1981. Photo: Joyce Edwards. **Top:** *Pin*, sterling silver, rosewood, silver and 18K gold inserts, 1981. **Center:** *Shell Form Pendant*, silver with faceted quartz and pearls. **Above:** *Pendants*, sterling silver shell structure; *left*—reticulation and ivory nut and moonstone (reversible); *right*—ebony and red enamel (reversible)

hadn't yet discovered the wheel or the arch . . . but they utilized every metalsmithing technique known to man. Their culture is 2,000 years old—a relatively new culture when you think that the culture of King Tut was already 3,000 years old and the Etruscans had a culture estimated at 5,000 years. . . . Gold granulation was a lost art. But almost any metalsmithing culture usually discovers it. They still had it in Colombia."

This, then, was the catalyst that energized him to pursue research in the lost art of granulation when his two-year tour with A.I.D. in Colombia was completed. Syracuse University provided the fertile academic atmosphere for such study. He enrolled as a metalsmithing major with John Marshall, then coordinator of the discipline, with whom he worked closely and established a lasting friendship. With extraordinary energy, at the same time, Bill taught advertising and basic design, was museum director for Lowe Art Center and designed the proposed art school complex.

That period of arduous work not only allowed for deepened exploration of techniques but heightened and enhanced his proficiencies in metalsmithing mastered much earlier. "Historical Research of Pre-Conquest Gold in the Americas" was his thesis for an M.FA. degree, conferred in 1970.

Subsequently joining the faculty at the University of Akron, he designed and developed a new Department of Metalsmithing and Enameling. With his singular abilities of organization, that studio was to become a showplace of order and efficiency.

Bill was elected to the Society of North American Goldsmiths as a pro member that year, one of the first to be so honored by its founding members. His works in metals by this time had been juried and invited into significant shows across the country on a regular basis. The listing would have such diversity and magnitude it would be needless to cite them all, but the traveling exhibitions "Goldsmith '70" at the Minnesota Museum of Art, St. Paul, the Museum of Contemporary Crafts, New York, and "Goldsmiths '74" at the Renwick Gallery, Washington, D.C., are two of the national jewelry/metals competitions that come to mind.

In the classroom he was part tyrant, part humorist. He demanded a great deal from his students, but tempered it with a caring, warm kindliness that engendered both fondness and respect. Many former students recall some incident when they resented his dogmatic and exacting sense of excellence, as he urged them toward a realization of their own innate potential, but that twinkle in his eye put it all in perspective as they were motivated so skillfully to reach for the untested and the unusual. Drawing, design and art history were always a prerequisite for his courses, and a strong emphasis in designing and skillful rendering was encouraged.

Bill's status in the profession and contribution to contemporary metalsmithing was

multiplex. The listings of his activities, exhibitions and awards are extensive, evidencing his spirited capacity for hard work, his love for the qualities inherent in precious metals and the possibilities intrinsic in the techniques of working them. As he traveled extensively to lecture and conduct workshops across the country and internationally, he shared generously his vast knowledge, skill and enthusiasm for his work. This was also reflected notably in the film *"Contemporary American Jewelry/Three Viewpoints"* (with Heikki Seppä and Mary Ann Scherr) aired on P.B.S. nationally in 1976.

From earlier studies Bill was stimulated by the newest technologies. His university enabled him to use his engineering skills to develop and assemble a variety of complex new systems to advance and expand the studio capabilities.

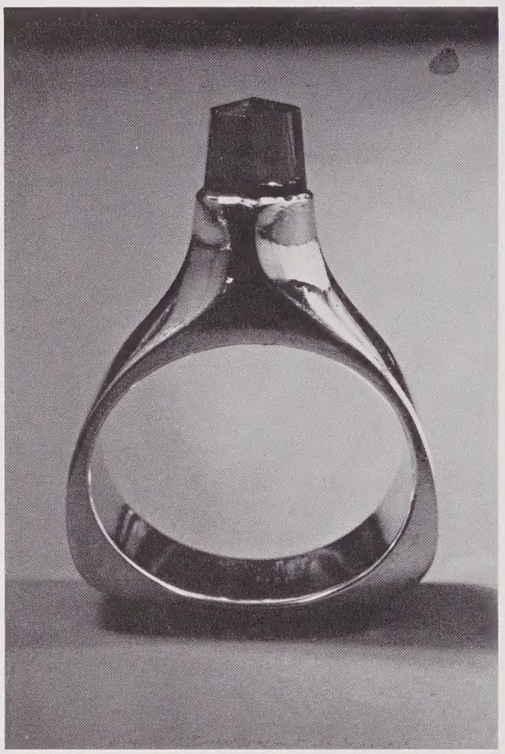
His own work was deemed by those artists who followed his career as becoming better and more beautiful through the years with a strong classical quality that transcended time and fleeting trendiness. Favorite aphorisms are quoted repeatedly by those who knew him well. As regards gimmickry in some avant-garde jewelry, he would quip, "If you can't make it *good,* make it big." Averse to much of the "hot-stuff" being brandished recently as jewelry/metals, he felt this work was a betrayal of a striving toward quintessential "fine-ness." For that matter, "a word he liked to use was 'finesse,' something he put into all his work," a close colleague noted.

"He loved art," the head of the Art Department said of him, "he loved the craft of metal—what had been created and could be created with that medium. . . . Bill loved enameling because it was jewellike and small and one had to get close to it to see the beauty in its detail.

"He had a burning desire for fine craftsmanship and for beauty and a no-nonsene approach to learning. Bill was not one to beat around the bush. He said it straight out—one might not agree with his analysis, but it was always his honest view of the situation. . . . Bill was of the old school—and saying that meant that he placed tradition and learning in the highest priority." Another famous Neumann maxim was, "There are only 168 hours in the week and we have to decide what things are most important and then use our time to do them well."

An acolyte now geographically removed but distinguished in the field recalls, "He advocated what he achieved himself, that the [metal]work be crafted with precision to the ultimate degree so that the technique used not be read obtrusively."

Bill's most recent metalwork and jewelry appear at first glance to be simple, but are, in fact, logically derived forms with a tight structure and precise ordering of elements within each piece. The crisp structural abstractions provided "purposefully simple shapes [for] very complex color—which offer great contrast," he remarked. For this end he used rich accent pieces, such as unusual gemstones or exotic woods. Surface texture contrasts such as repoussé, mokume gane, reticulation and gold granulation are in evidence, and, of course, the luminous depths of color in the transparent enamels. All draw one in to examine each piece "carefully to appreciate the painstaking craftsmanship involved, reflecting the hours spent in such time-consuming processes."[1] Many pieces are engineered with articulating elements. "It pivots—moves on the wearer's breast so that it picks up the light," Neumann explained, "and subsequently interacts with the physiology of the body in motion." This integration between body adornment and function seems to permeate his works: size adjusted to human scale, craft, process and form in concert with function.



Top: *Ring*, sterling silver, smoky topaz, **Above:** *Ring*, 14k yellow gold, Trillion diamonds. **Opposite page:** *Pendant* (close up) gold granulation with transparent enamel, 2½ × 4", c. 1969

Bill's administrative skills were tapped by the university when he was selected as acting head of the department in 1976–77 and again in 1979. The Society of North American Goldsmiths (SNAG) recognized these abilities in electing him Secretary Treasurer in 1978. He had been deeply involved in the organization from the early stages: "Bill's reign began at a time of enormous growth, when SNAG consisted of 200 to 300 members and ended when it was more than 1000. During this crucial period . . . Bill housed the entire SNAG office under his authority . . . business procedures had been discouraged or not existent—the SNAG office was in a shambles." With their unique business acumen and expertise Bill and Marty "created a smooth-running, responsive, efficient office that allowed for the vast expansion during this stressful period. Many difficulties arose to test Bill's character, but his strong personality remained untarnished."[2]

Bill's concerns in recent years ran deeply regarding the development and future of SNAG as an organization. He felt strongly that we not only have concern and respect but also an understanding for where we have been in order to help determine where we are going. It disturbed him that all of the work that has furthered quality "North American Metalsmithing as an Art discipline . . . and the real meaning and essence of (SNAG) was lost," as was stated by Heikka Seppä in the October, 1985 *SNAG Newsletter*, no. 61. (He would have loved that rebuttal!)

Bill's visions are embodied in the beautiful metals and enamels he created, in the lives he touched, in the fine new art building at Akron he helped redesign. Bill's warmth, wit and wisdom are gone, but part of him lives on in the department he created and the metalsmiths he trained. He is sorely missed.

Notes:

1. Joseph McCullough, "William Neumann," *Metalsmith* vol. 1, no. 4 (Fall, 1981), p. 62.
2. Mark Baldridge, Editorial, *Metalsmith* vol. 6, no. 1 (Winter, 1986), p. 6.

Eunice Michaels taught for many years at the School of Art, Kent State University and is now Emeritus Professor of Art at Kent State. A distinguished member of SNAG, she is best known for holloware and fine jewelry, which she continues to make independently.

THELMA COLES

The Art of Tenuous Affiliations

by Elizabeth Skidmore Sasser

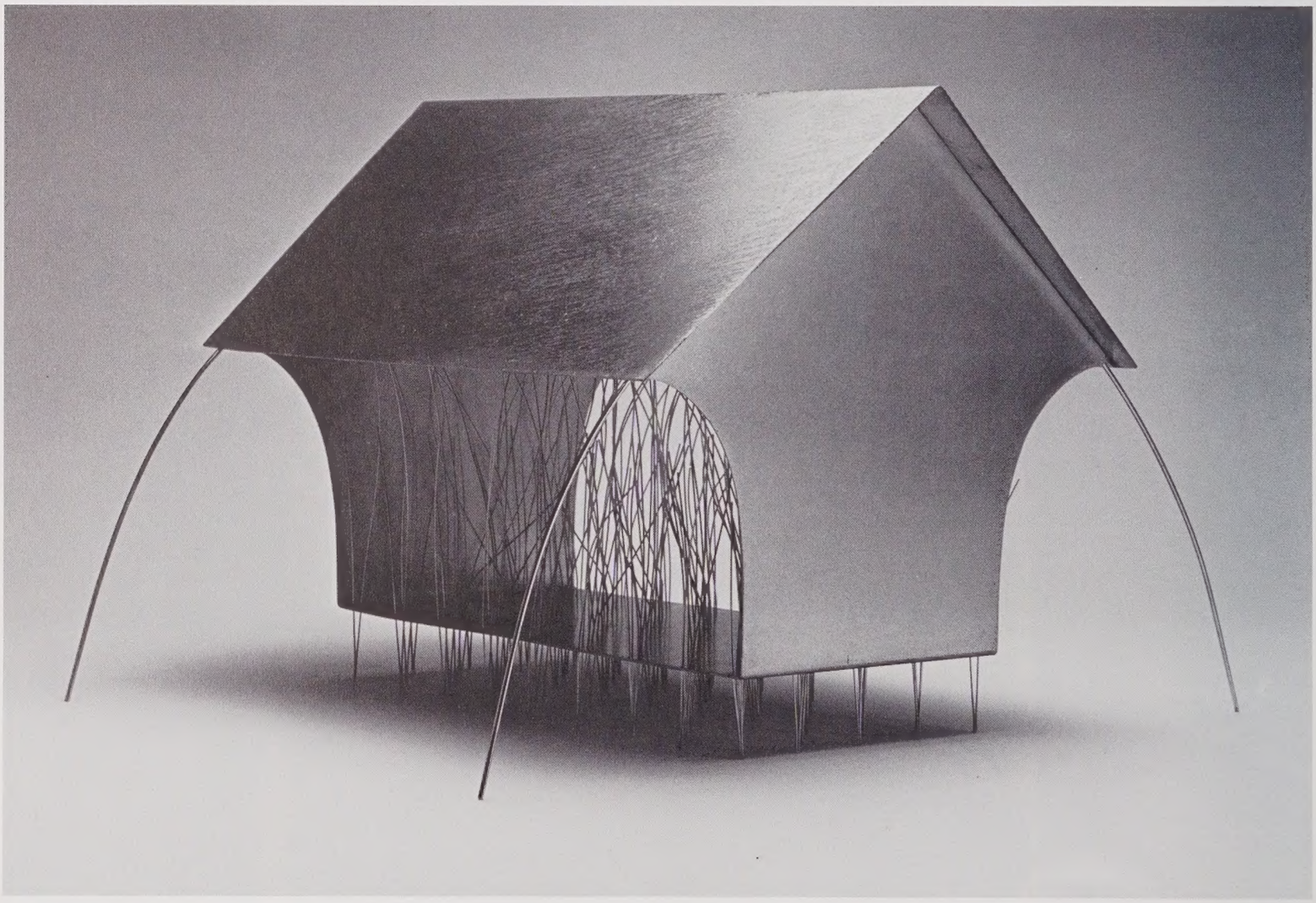
A small farm near New Braunfels, Texas. Sheds and a red barn have settled comfortably on the land. Lush green grass springs underfoot and a tangle of vines and trees leads down a slope to the river. The patterned topography found here, interfacing human efforts with the processes of nature, reflects the contrasts and harmonies that are dominant themes in the metalwork of Thelma Coles.

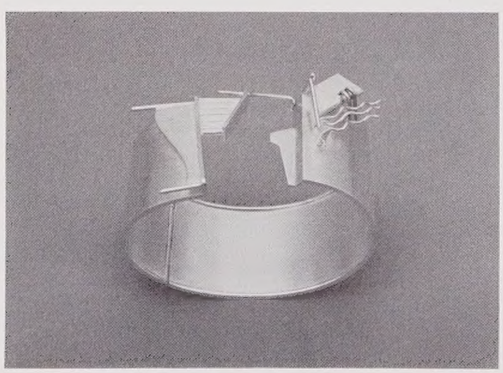
"My work depicts the land and is a reflection of my view of the environment. . . . I am inspired by areas where man's alterations or additions work in visual harmony with his surroundings."

Born in Virginia, Thelma Coles's life has involved inward journeys of the mind as well as outward migrations, which, for the daughter of a Navy family, meant periods spent in such contrasting landscapes as Alaska and Spain. Coles attended San Diego State University, where she majored in crafts. After the completion of a master's degree in metalsmithing and jewelry in 1978, she secured a position as associate professor of metals and beginning design at the University of Texas. Hours in the classroom are spent in Austin, but her life and art are centered on the farm near New Braunfels.

While in San Diego, Coles was primarily concerned with the relation of form and function, with the acquisition of technical knowledge, with a concentration of bracelets and containers, which could be treated sculpturally, and with developing her imagery of natural formations. On a trip to Yosemite National Park, Coles relates, "I liked what was going on with glaciers. Glaciers shift and stack and layer the materials in their paths. I tried to make a piece of metalwork that dealt with domed forms and with stacking and layering. I tried to capture what was out there in the landscape."

The glacial process observed at the National Park was only one of the earth-shaping forces at work in California that influenced Coles. Construction on state roads offered a chance to watch earthmoving equipment leveling hills and rolling back land to make way for the smooth lanes of superhighways. Manmade alterations contrasting





Above:
INNER STABILITY,
copper, stainless steel, 15 × 21 × 21½", 1983.
Photo: Sandy Wilson.

Left:
DISTANT TRANSFORMATION,
silver, brass, 2 × 2⅝ × 1⅝", 1980.

Right:
ROAD CUT,
silver, plexiglass, copper, 3⅛ × 3⅜", 1976

those of nature inspired *Roadcut* (1976), a bracelet of silver, plexiglass and copper. *Roadcut*'s polished surfaces recall shining stretches of highway, while the irregular gatherings of metal at either side of the central band resemble gashed strata of earth, piled in layers along the roadbed. Engineering skills that govern road and bridge building may have touched a subconscious parallel in the artist's search for control over her metal forms.

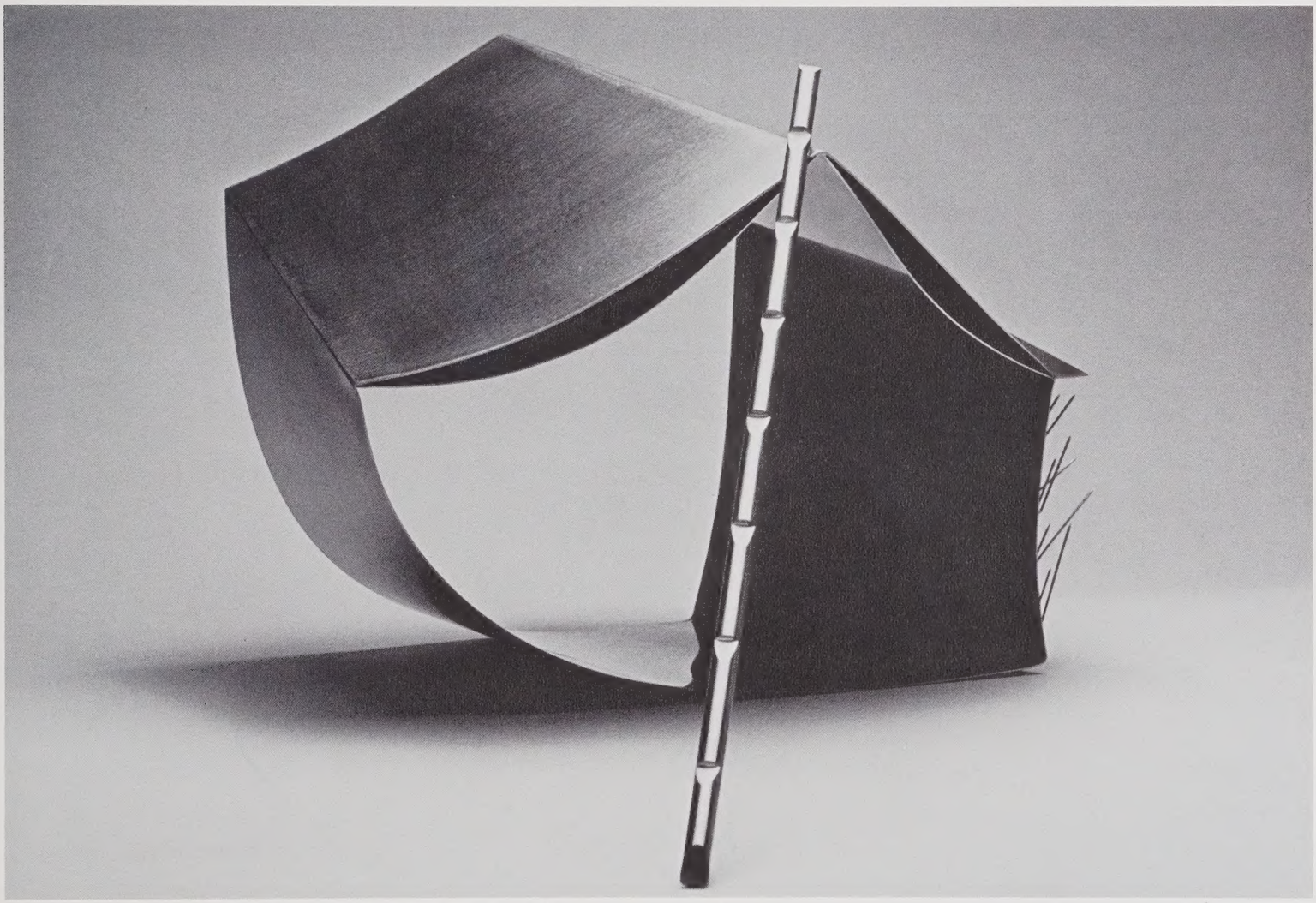
After the move to Texas, Coles's response to nature continued to grow. "Instead of using surroundings as subject," she says, "I wanted to grasp a feeling about a thing rather than just taking what was there." What was waiting in the Lone Star State was an outreaching land embracing great distances and a landscape where dramatic contrasts were commonplace.

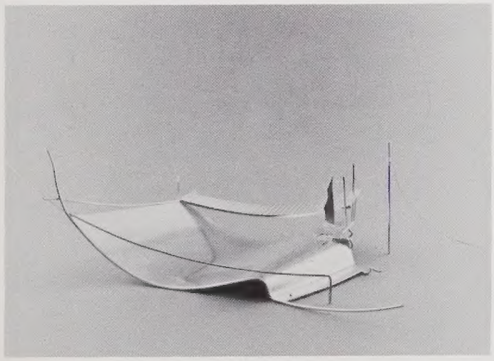
Driving from Austin to Galveston, Coles discovered abrupt transitions between the Hill Country and the flat coastal plains. In contrast to undulating land and dense thickets, the shores along the Gulf shift with the tides; docks seem to hang suspended above water flickering with light. In this marine world, land masses are pulled together by a bridge or a few planks hastily put down. These elements are present in *Contingent Perceptions* (1981), a small silver sculpture, and the bracelet *Distant Transformations* (1980); both are based on "metaphors of place," on "frail connections" that link two areas and on the forces of nature that interact.

Conceptions of motion and the transformations of shapes are also related to discoveries encountered while driving. She explains: "I like what happens when you see a thing from a distance, and then it's right across from you; finally, I'm looking back at it . . . my perception totally changes—the shapes change and so does my reaction. I try to capture something of this in my work."

With the artist's interest in multiple points of view, an awareness of transitions and of varying relations between form and space, jewelry was no longer suitable for expressing her ideas. *Spacious Expansions* was Coles's first large steel piece. It brought a whimsical reaction from a colleague, who asked, "What is it? a five-foot brooch?" Coles says she never thinks of scale in this way. As long as the parts are in the right place and the same kind of energy is present, it makes no difference whether measurements are made in feet or inches.

A growing preoccupation with the pressures exerted by people on people was expressed abstractly by the subtle balance of *Mutual Dependency* (1982) and coincided with a trip to Mexico, where village people revealed a value system based on the support and strength of the family. The undivided space of village houses defined by flimsy walls covered with thatch, supported by frames of cane or rough wood, contrasted with solid walls of apartments in large urban centers, where loneliness and isolation exist within function-specific rooms. Family bonds among the villagers were durable, while architecture was impermanent. No definition separated inside and outside; the earthen floor was an extension of the

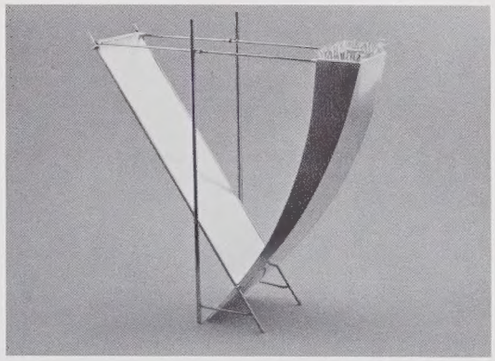




Above:
OUTSIDE IN,
stainless steel, 17 × 21 × 34", 1982.
Photo: Sandy Wilson.

Left:
CONTINGENT PERCEPTIONS,
silver, 3 × 10½ × 5", 1981.

Right:
MUTUAL DEPENDENCY,
silver, stainless steel, 8¼ × 8 × 2¾", 1982



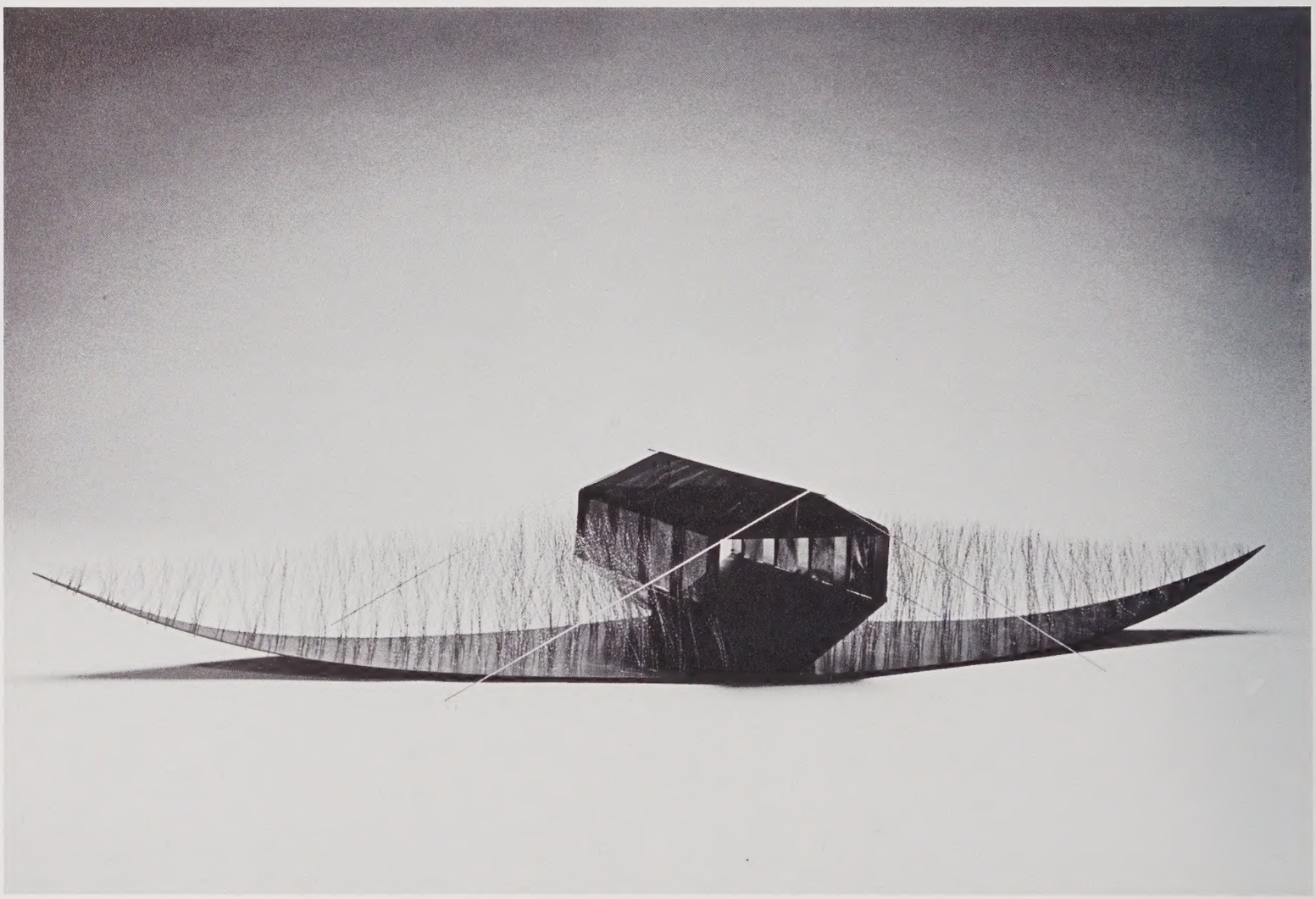
ground. Compartmentalization depending upon ruler and T-square was nonexistent; instead, shelters grew like natural organisms. From these experiences, new concepts and methods emerged in Coles's sculpture. "Since 1982, the approach to my work shifted emphasis, by dealing with my response to situations, places, customs, and surroundings. The work now deals with content. The pieces are abstract metal sculptures which serve as metaphors for my understanding or reaction to human relationships, for the connections between individuals and their families, their communities, their architecture, and the natural landscape surrounding them. Dependence, freedom, growth, persistence, and support are issues that keep recurring in my work."

Root Structure Response (reproduced in the fall, 1983, issue of *Metalsmith*) signaled the direction in which Coles's sculpture was moving. Constructed from sheet copper and stainless steel wire, the sloping sides are upheld by intertwining wires drawn up from the ground/base through the "roof," where they flourish like grasses on a hill. The symbols for roof and hill converge; the protective covering seems to invite refuge from outside pressures. At the same time, the open-ended spaces framed by the roof lines reject the imprisoning effect of boundaries.

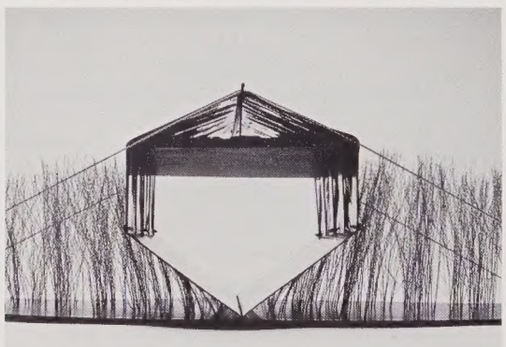
A more formal shelter, making use of symmetry, is *Inner Stability* (1983). At first glance, the pitched roof appears to be secured by four curving wires that move to the ground. The structure, however, is held on the points of wire bundles, delicately threaded through the floor where they are permitted to expand freely. Coles does not believe that the relation of her sculpture to architecture is as significant as her concern for structural solutions, that is, the way parts are supported and held together. Buildings, to her, are associated with solids; she is struck by alignments of pieces in a tenuous balance and the use of finely integrated connections.

Although lacking tensile construction, *Outside In* (1982) is nonetheless reminiscent of a tent form, an image made more vivid by the ladder/pole motif. The sculpture is Miesian in its simplicity, its respect for materials and in the precision of craftsmanship.

In *Provisional Subsistence* (1984), the stabilizing presence of a triangular figure of dark metal provides a firm center and internalizes the composition when seen from the open side. A smaller triangular opening at the end of the shadowy interior admits light, which unexpectedly casts a reflection on the smooth panels, producing a kaleidoscopic design. In contrast to the sheltering implications within, the outside area at the right is given definition by poles and curving wires that separate space with fine lines, which look like silverpoint drawings. At the left, a linear repetition of wires curves inversely. Covered by rice paper, this treillage shades wire clusters that rise from a field of earth. Metaphorically, there is a reference to the human need to build "a place." Here, the protected space is located between barrenness and cultivation; it is a fulcrum holding



Above: TENUOUS AFFILIATIONS, mixed media, 8½ × 60 × 18", 1984. **Below:** Detail. Photos: Sandy Wilson



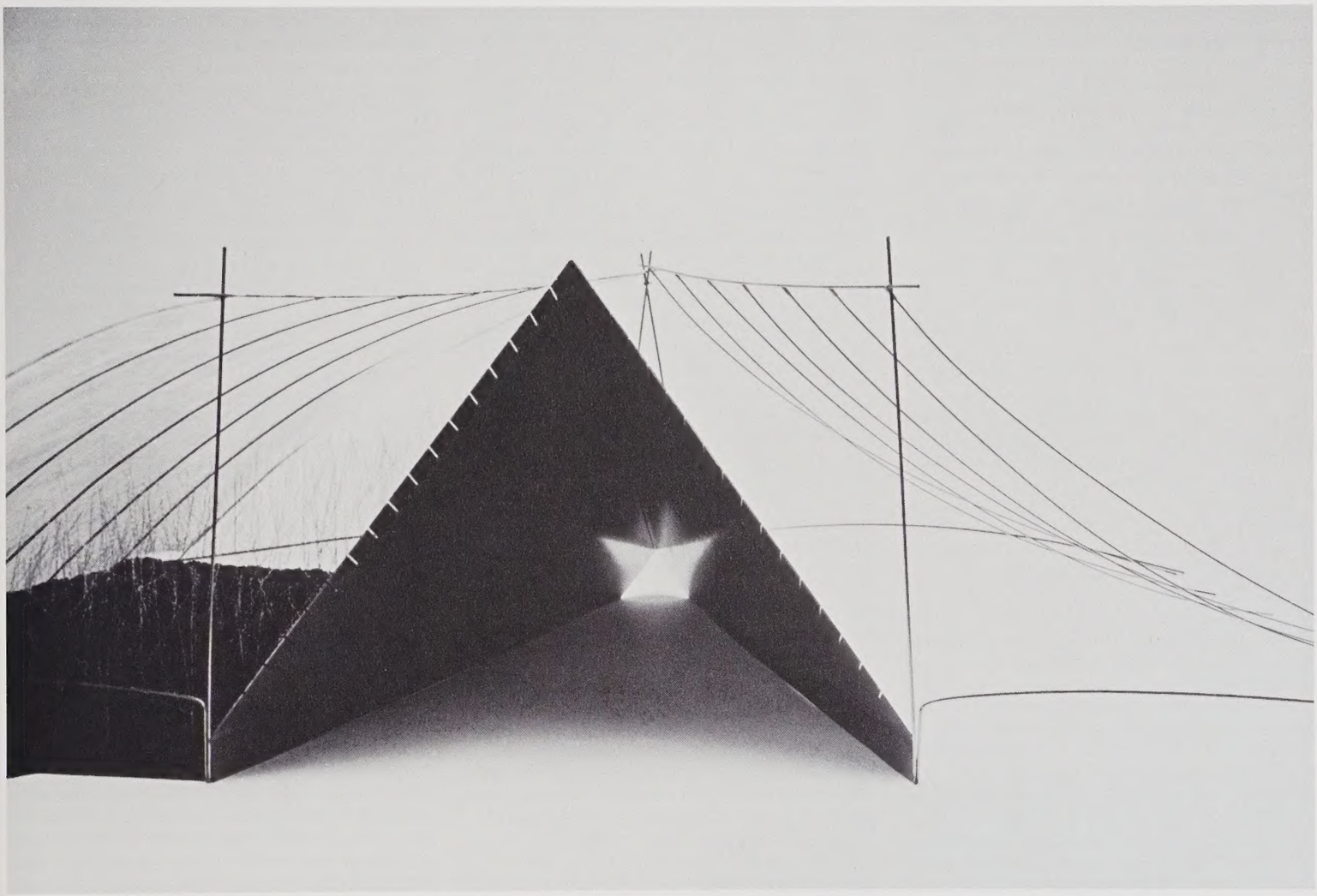
untouched nature and man's impact on the land in a state of precarious balance.

The boundaries of *Tenuous Affiliations* (1984) are clearer in their demarcations. A metal strip, five feet long and curving up at both ends, becomes a ground for wire tendrils. Midway in the symmetrical composition, a house form made of vinyl is supported. At the top of the soft, barnlike shape, a pitched roof protects a box of dirt; at the bottom of the construction, the pitch is reversed. The architectural structure has the illusion of being held by tension lines and grounded in a manner similar to that suggested by *Inner Stability*; but it is not human ingenuity that anchors the form; instead, the tips of the inverted pedimental figure are steadied by the resilience of the wire reeds. The central container seems to house the primal mysteries of the womb, home of darkness and growth. A house, or shelter, as Gaston Bachelard wrote in *The Poetics of Space*, "is our first universe, a real cosmos in every sense of the word . . . the house shelters daydreaming, the house protects the dreamer, the house allows one to dream in peace."

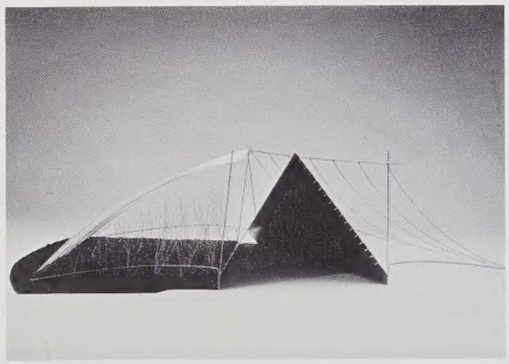
Marginal Security (1985) proves an ambitious addition to the series of sculptures with extended metal bases, each with a dominant shelter. In this piece, the "container" is underground. The upward push of what appears to be a boat's prow ends and the lines of the metal follow the contours of a hill. The outer edges of the metal band are jagged and the surface is roughened and raised in welts. At the apex of the hill a rift separates one side from the other. Seen through the opening, the roof of the subterranean form is also pulled apart. On the upper ridge, growths of hairy wires are present, but they are not as profuse as in the earlier pieces. The threads of wire are protected by a screen of rice paper held in tension by intricate connections. This is the most ambiguous of Coles's sculptures. Is the focus a fragile birth, the beginning of new life? Or, how do we hide ourselves? How secure is the sheltering earth? Contradictions are raised in the contrasts of "outside" and "inside," lightness and darkness, the articulation of slender wires in contrast to the strength of raw metal, the plasticity and abundance of the soil, which rests at the bottom of the "house," as opposed to the vulnerability of the paper canopy above.

Like a skillful act on the high wire, Coles's sculpture is about balance and the effort to maintain an equilibrium. Her metaphors are drawn from the interactions and support systems existing between people, and the connections between human beings and nature. The artist's imagery is abstract, related to the changing aspects of the land and sea, to boundaries and to the simplest of human shelters. Coles's intuitive wisdom seems to come from that universal source which led Bachelard to call the hut "the tap root of the function of inhabiting."

Elizabeth Skidmore Sasser is professor of architecture at Texas Tech University in Lubbock and a contributing editor to *Metalsmith*.



Below: PROVISIONAL SUBSISTENCE, mixed media, 14½ × 59 × 34", 1984. **Above:** Detail. Photos: Sandy Wilson



Artistic Creation and the Power to Heal

by Melinda Bridgman

Creating while dying serves as a positive means for a patient to mourn the death of his/her own body.

For the past six years I have been working as a metalsmith on the staff of the Connecticut Hospice, Inc.—an organization that cares for the dying. It includes both a home care program and an inpatient facility. As one of several artists in varied disciplines (including visual arts, drama, literature, music, creative movement/dance, film, needlework and crafts, nature and gardening) who work in this environment, I feel that this experience has been one of my most creative and stimulating challenges. It has confirmed and heightened my belief in the healing potential of "art." For me "the power of artistic creation and the power to heal are intertwined, reciprocal forces that originate in the soul. Once creative energy is tapped and the individual's internal flow is set free, nourishment of the body, mind, emotions and spirit begins."*

Hospice is concerned with the "quality of life" and the "quality of death" of patients. They are given every opportunity to live out their lives graciously and to die with dignity. Hospice acknowledges that art helps this "living" process. An artist is thus recognized as an integral member of the health care team—along with the nurse, physician, pharmacist, social worker and pastoral care person. Each discipline contributes to and allows the others to be effective.

As artists we are facilitators who create opportunities for patients, patients' family members and staff to participate in and/or observe a wide variety of art forms. For many patients and family members this exposure is their first involvement with the "arts." These experiences can include learning to play a musical instrument, planting bulbs in a garden for spring blooming, designing and fabricating a baby's quilt for an expected grandchild or forging a gold wedding band from a cast ingot for a loved one in a nursing home.

Metalsmithing as an art form is well-suited to a hospice. The familiar sounds of the craft—sawing, filing, drilling, hammering, etc.—are vital. The techniques and tools suggest industry, hard work and involvement. An individual does have to interact with the material in some direct and honest way. It is always a learning and growing process.

My encounters with patients are open, direct and personable. Some I meet only once; others I might see for several weeks. At one work session a patient may be energetic and ready for action, at the next exhausted, in pain or dying. Because with disease one never knows what to expect, every moment of interaction is sacred. I try to get a sense of the total design of an object that a patient wishes to fabricate from the beginning of our relationship. Then, if for any reason the patient cannot finish the piece, it can be completed by me, a friend or family member, retaining the integrity of the original design.

The workspace in the inpatient facility is wherever the patient feels comfortable, is safe and is not disturbing others. A patient can work in bed, in a geri-chair or in a wheelchair. These vehicles can remain in the patient's room or be positioned in the patient/family living room, private meeting room, commons, cafeteria or even outside on the patio. If a patient is ambulatory, we can go anywhere. The rolling bedtable, which can be raised or lowered to the appropriate height, becomes the workbench.

I carry the tools for patients to use in two canvas tote bags. They are simple, basic tools—almost primitive in terms of today's modern metalsmith. One hammer serves several different functions. For example, a planishing hammer may be used to form, shape, stretch, forge, texture, as well as to planish metal. I do occasionally bring more specialized tools, if I cannot improvise with those that I have at hand. The materials I use are primarily copper, yellow brass, red brass, nickel silver, sterling silver and, on special request, gold.

Many patients become disabled by the disease process. It can be extremely frustrating and upsetting for a patient to feel his/her body deteriorating. He/she usually needs time to come to terms with the illness. The creative process is one way to help this "healing" begin. It often serves as a means for the patient to "key deeply into his/her thoughts and feelings and to connect with dreams, memories, hopes and needs, philosophical ideas, religious beliefs and meaningful events, people, places and objects in his/her own life. From this rich and varied source a patient excerpts images that are developed and 'beautified' into, in my experience, bells, wind chimes, mobiles, pieces of jewelry and working tools for those who remain. These become both symbolic and unique in time and deeply personal in sacredness."

Since metalsmithing requires coordination of the mind and body to manipulate specialized tools and perform precise, techniques, a patient who desires to make a piece in metal is frequently challenged by his limitations. In order to work with a patient I must be invited to enter his/her intimate space and be allowed to physically challenge his/her body. This can only be done if we have already established a relationship of trust and understanding. We work together to make the body "whole"—combining our skills to help the body perform efficiently and to complete required metalsmithing procedures. The process is a subtle one of "attuning" energies. Often I must adapt a technique to fit a patient's particular disability. Also, I must be constantly ready to adjust my participation in a specific process—giving more support as the patient tires and loses strength or easing up as he/she gains confidence and even energy—so that a patient always feels in control of the situation.

We work together to make the body "whole"—combining our skills to help the body perform efficiently and to complete required metalsmithing procedures.

J. for example, a 65-year-old Polish woman, was making a brass bell. Whenever she worked she was seated in a movable geri-chair with an adjustable back. The chair could be locked into position so that it would not move. When the back of the chair was tilted backwards the legs of the patient were lifted upwards to rest on a cushion. The patient was then "ungrounded"—neither supported nor balanced by her own legs on a firm surface. During our work sessions it was necessary for J. to be in this "ungrounded" position; otherwise, in an upright position, her legs tended to become swollen and painful. As J.'s disease spread, she became progressively weaker and her precision diminished markedly. She was at a place in her work where she needed to close a 3½" seam of an 18-gauge yellow brass cone-shaped bell for soldering. The seam was open about ¼ to ½". The metal had been annealed and the edges were filed. J. could hold a rawhide mallet and swing it without help. I held and supported the piece upright on a wooden mandrel about one foot in front of her—within comfortable striking distance. The open seam was facing her. As J. struck out, I adjusted the mandrel's position—pushing it firmly and directly to meet her blows securely. With persistance and several rest periods the seam was closed.

B. had been on and off the home care program several times in the last few years. She was very concerned with the effect that her illness and eventual death would have on T., her 10-year-old son. Since his birth he had always experienced his mother sick. He was having great difficulty in school and at home adjusting to all that was happening within his family. Life was a great worry and struggle. B. could not leave home without strong physical support. T. was "the man of the family," and did many errands for his mother. B. wanted to share a positive, creative experience with her son in hopes that it would be memorable and meaningful to him. Although B. had worked previously with tools and metal in car mechanics, she had never had the needed time to explore her artistic sensitivity. She was intrigued with the metalsmithing tools and techniques. T. loved the work, but he was often involved with his friends when I came to visit. B. and T. worked independently on their pieces; however, upon completion T. asked if he could combine his forms with his mother's into a multimetal windchime. B.'s delicately sawed heads of a mother and son in profile were suspended facing each other under T.'s man-in-the-moon and lopsided star.

For her second piece B. fashioned a minutely detailed bronze candle lantern of fish, buttercups and birds. She would sometimes have problems manipulating the saw frame, but with incredible concentration she could do so, if I steadied and guided the metal. When she reached a plateau in her illness she was temporarily discharged from the home care program.

Several months later, B. came into the inpatient facility. We spent time together talking about T. and reminiscing about the windchime experience. I asked her what special thing I could do to help her at that time. She said that she wanted T. to have photographs of the piece that they had made together. She felt that even if the windchime was misplaced in the settling of her apartment, T. would have the photos. After B. died and T. was transferred to the custody of B.'s sister and husband, I presented T. with the photos. Although he was silent and teary, he smiled slightly upon receiving the gift from his mother.

O. was by heredity part American Indian. He owned a tremendous collection of Indian memorabilia, which was displayed throughout his home. He had spent many hours with his grandson searching for arrowheads and sharing with him the Indian stories that he had learned from his own mother and father. There remained an unsatisfied desire to place this heritage into a tangible artifact to leave behind as an heirloom for his family. Metal seemed an appropriate material—culturally—to use for this venture. O.'s wife is a very talented, self-taught artist. She designed a windchime/mobile for the whole family to produce. It consisted of a nickel thunderbird in silhouette about 6″ by 6″ and three large copper arrowheads each about 4″ by 3″ suspended from the tail and each wingtip of the thunderbird. Familiar American Indian symbols—the hatchet and warbonnet—were soldered to the arrowheads, and buffalo horns were soldered to a copper triangle on the breast of the thunderbird. I contributed a small turquoise for the eye of the bird.

"The patient had great difficulty sitting comfortably for long periods when we worked. Although he could not accomplish as much on the piece as he wanted to, he was always there to oversee the operation. O.'s two daughters did a major part of the fabrication. His grandson only worked occasionally; however, he often checked to approve the progress of the piece. Finally O.'s condition became so critical that he was admitted to the hospice. Even there we worked beside his bed—always keeping him aware of each step in his project.

"On the day that O. died I stopped by his room to say goodbye and to lend support to the family. They insisted that I stay with them. I had brought with me a completed necklace displaying a copper warbonnet pendant which the two daughters had made as a special tribute for their father. They were able to present it to him just before he died. Work on the windchime continued after O.'s death at the home of his eldest daughter. We spent several memorable hours visiting, soldering and polishing. When the windchime is held by the chain at the top of the piece, the thunderbird revolves slowly—as if spiraling towards heaven. The arrowheads swing outward giving momentum to the movement.' At the conclusion of my last visit we went to the gravesite. O.'s tombstone, which had also been designed by his wife, was carved with two parallel arrows pointing upward and forming a pathway through which O.'s soul could leave the body and travel heavenward.

Hospice is concerned with the "quality of life" and the "quality of death" of patients.

S. arrived at hospice knowing that she was beyond treatment and about to die. She realized that she was living on borrowed time. Medically there was no reason why she was still alive. To her it was, rather, the result of a much greater force which allowed her to remain and live. For these added moments S. felt a continual wonder and appreciation. She requested to see me a few weeks after she arrived. By then she was well-involved in other arts projects—sewing fabric clown dolls, stencilling handkerchiefs, attending musical performances and the like. Our first meeting was thorough and intense. S. wanted to make a clipper ship with a copper hull, three brass masts and 12 individual overlapping sails of brass and nickel. This was to be a surprise Christmas present for her older, devoted brother. He had been in the Navy and loved the sea and ships. Although before her illness S. had never so much as sewn on a button, she would make the ship herself. We set to work. S. wanted to have the sails of the ship slightly rumpled and uneven—as if filled with life and movement. She also wanted to retain the natural imperfections of the material as evidence of personal involvement and craftsmanship. We discussed the manner in which the ship was to be viewed. Mounting it within a wooden shadow box seemed most fitting. S. decided that her brother should unknowingly construct the box according to our specifications. He was a woodworker and would do anything for his sister. Three days later the perfectly measured and stained box appeared.

S.'s health improved at the hospice. The food tasted good; her appetite returned. She gained a new strength and confidence in herself. She began to stand up and eventually walked with a cane. S. was discharged home to the care of our home care team.

Christmas was approaching quickly, so my visits grew longer and more frequent. We soldered all the sails together, attached the three masts, and then soldered guide wires onto the backs of the sails in order to secure the ship in place within the box.

Although before her illness S. had never so much as sewn on a button, she would make the ship herself.

Often I had to hastily depart through the front door as S.'s brother would arrive unexpectedly at the back door. I did not want to remain and arouse any unnecessary suspicions. S. coached her mother and older sister as they lined the box with deep blue velour to resemble the rough rolling ocean. S. restained the box to match the darker walnut woodwork in her brother's living room where she hoped the ship would be displayed. Then she borrowed her brother's woodburning set and adorned the box with decoratie details and inscriptions. She named the ship the Connecticut Hospice. S. explained that to her hospice meant a place of rest during a long and difficult journey. Both she and her brother were on that journey together at the hospice. Every day that she was there, her brother was with her for part of it. Even though he himself was recovering from the results of a blood clot, which had lodged in his lung and for which he needed adequate rest and recuperation, he came to be with S. He pushed her bed around, guided her geri-chair and gave her comfort and company. For S. it was the work of the Lord that brought them through that difficult time safely.

S. also added that the Connecticut Hospice was the place where she began to live again. She believed that if she had not gotten sick she would have continued on as a very capable, hard-working and effective branch bank manager. However, with her illness she acquired a whole new perspective on life. She was given an opportunity to make changes in her life, to meet new people and to enlarge her circle of intimate friends. For the first time she began to create original gifts for her family and friends. She began to take careful notice of birds, trees and flowers. She began to really feel. She was happy and fulfilled.

At last it was time to lacquer the ship and mount it in place within the box. I was now more nervous than S. Somehow I felt responsible for the success or failure of this project. S. assured me not to worry. We drilled holes in the back of the box to receive the guide wires and sprayed the box with lacquer. I left soon thereafter to allow the lacquer to dry adequately overnight. When I arrived the next day S. made me close my eyes. I was led by her mother into the kitchen. The ship was completed. . . . she was ecstatic.

S. died at home that February. Her life was one which had enriched us all. As her father so lovingly expressed on the afternoon of her funeral, "S. was the most courageous person I ever knew. She taught us how to live and how to die."

In conclusion, since the arts help to enliven our imaginations and to connect us to the rhythms of life and the universe, it is important that they be shared with dying patients. Metalsmithing is a vital art form and one that fits well into a hospice setting. The objects become legacies of life—links from the present to the future.

* Quotes from Melinda Bridgman's *Creativity and the close of Life*, to be published soon by the Connecticut Hospice, Inc., Branford, CT. Melinda Bridgman is an independent jeweler who does private commissions. She is currently studying the relationship of touch, creativity and healing.

The unifying aspect of Schick's approach is the implied tension between foreground and background, between the occupied space of the wearer and the space at large of the jewelry.

Marjorie's Schtick

by Michael Dunas

"Boooorn in the U-S-A. Boooooorn in the U-S-A." The radio blasted America's rock 'n' roll anthem as my VW bug rumbled down the turnpike, heading for Washington and the flipside of Marjorie Schick—her papier-mâché performance pieces at the Renwick. The jackhammer music of the strident Middle American singer affirming his musical heritage triggered my curiosity about the jeweler with unorthodox materials, unorthodox style, unorthodox ideas—from Pittsburg, Kansas.

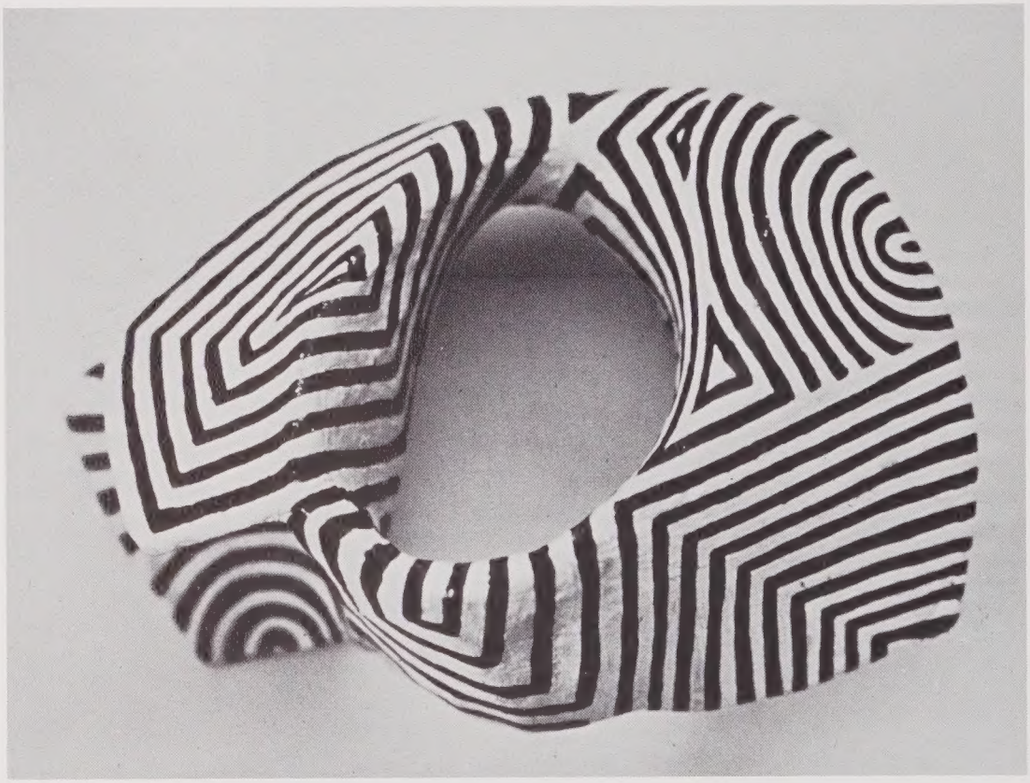
My anticipation of this event was colored by the collective memory of Schick's kindred spirits—Emmy Van Leersum, Gijs Bakker, Susanna Heron, Caroline Broadhead, Joke Brakman, David Watkins, Pierre Degen, Lam de Wolf, Julia Mannheim, who chart a course back to the 1960s and the jewelry revolution in Europe. Using the body as a springboard, these innovators challenged the formal restrictions of space, light, color movement, decoration, social ritual, material and method. Their resultant stylistic affiliation with clothing and fashion, coupled with their revolt against jewelry's class-consciousness, has impeded wider acceptance in the American metalsmithing community, currently wedded to the pedestal and the gallery. However, this move toward body sculpture appears to be gaining currency as the substantive work of artists such as Marjorie Schick gains wider exposure.

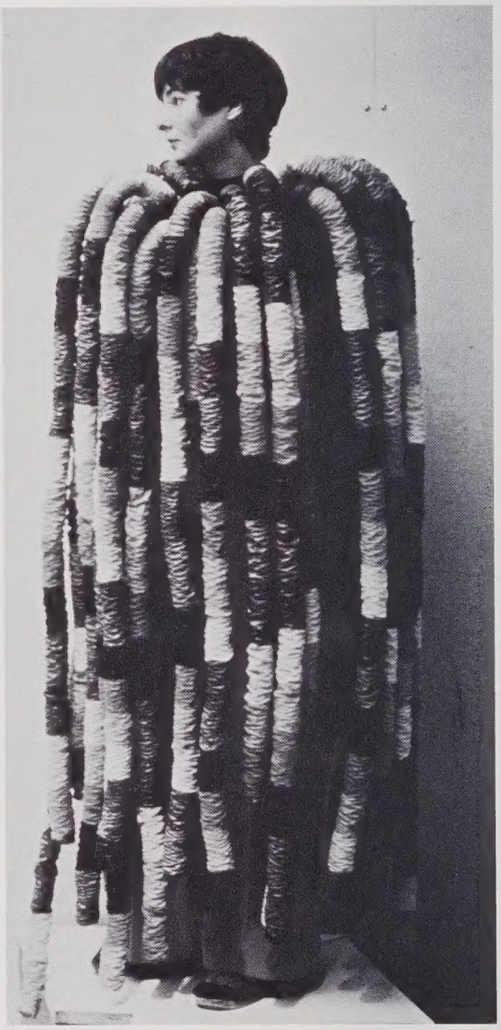
After considerable attention at the 1985 Society of North American Goldsmiths' conference, Schick has seen her reputation grow beyond the friendly confines of Gallerie RA in Amsterdam and Aspects in London. On this February weekend, not a year later, there was the performance at the Renwick as well as solo shows at Helen Drutt in Philadelphia and the VO Gallery in Washington, D.C.

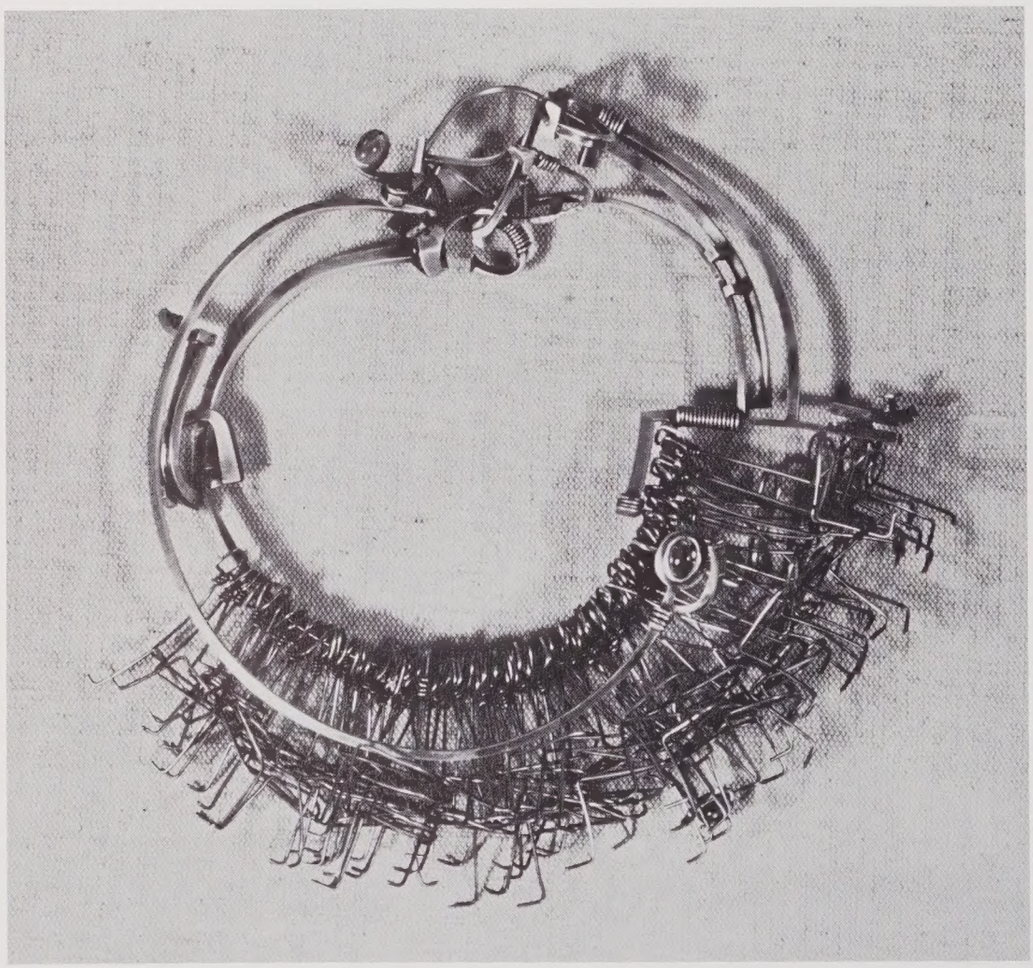
As I awaited the start of the performance, I recalled a letter from Marjorie in which she stated, "I am intrigued by all types of body ornament, from art forms incorporating the body to fashion to articles worn for rituals and for protection. I view the human body as a living sculpture and I am developing additional sculptures to be worn by it. I believe the body is capable of carrying large pieces both visually and physically."

Schick's jewelry is not designed specifically for performance but to be interpreted by performance. Whether Kansas City in 1976, the Bronx in 1978 or the Renwick in 1986, the programs were under the control and direction of independent choreographers. At the Renwick, Sharon Wyrrick of the Full Circle Dance Company orchestrated five vignettes that revolved about the

Opposite page: *Neckpiece*, painted wood, riveted, 1983. **Above:** *Brooch*, 2 × 2½ × 1½", 1963–64, Photo: Joel Degen



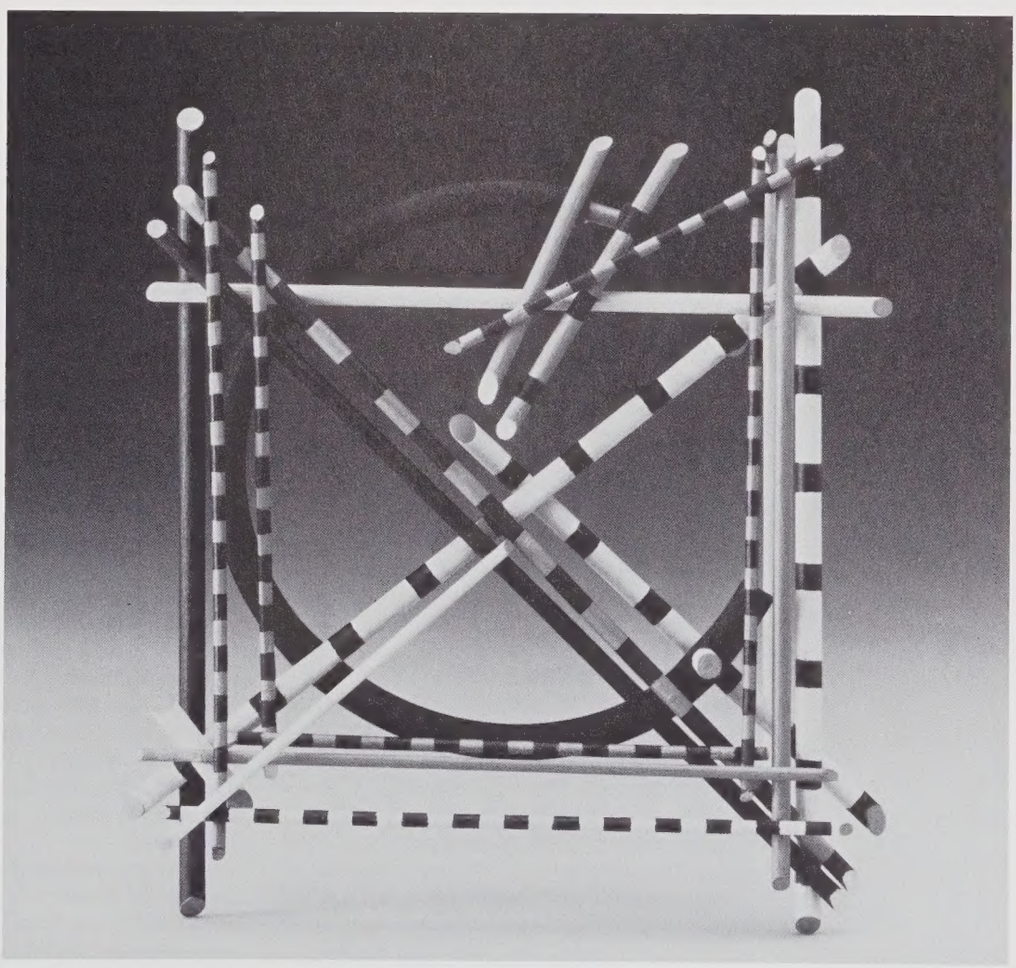




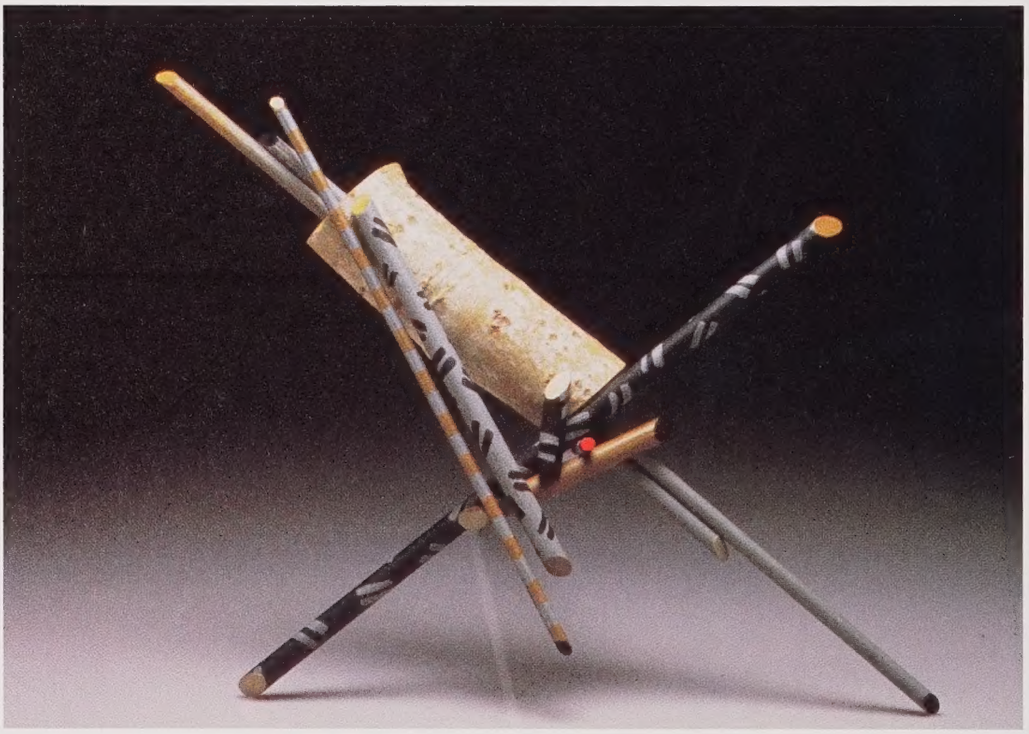
theme of social ritual. Here, the vibrantly colored armatures provided a dramatic tension between the personality of the wearer and his social mask. In "Cocktails," three dancers performed a ménage à trois of seduction, rejection and reconciliation, enacting their mating calls through lyrical movements of their arms and the flirtation of their fiery bracelets. In "House of Cards," Schick's headpieces and collars evoked the image of Alice and the Queen of Hearts. Humorously constrained by the "facade" of their costumes, the performers were manipulated as puppets by the proprietary rules of social card play. The farce was perpetrated as much by the grotesque jewelry as the comedy of manners. In "Wedding," the most primitive of the pieces, ponchos and headresses of fiber and beads subsumed the actors in a mysterious ritual, where the costume carried the weight of symbolism and rites of passage. The most powerful piece "Waltz" produced a solo dancer who emerged from a cage of cardboard slats to perform a pas de deux with the costume. The dissonant sounds of clapping boards, the recalcitrance of the inanimate partner, the aggressiveness of the alien material all created a visible tension that reflected on the ambiguity of the dancer dancing with herself. This day's program embraced the narrative element in Schick's work, using costume to magnify jewelry's dramatic role in everyday life.

The exuberant "pop-ism" of these papiers-mâchés reeks of deviant behavior for one trained in the rigorous curriculum of post-war jewelry. Schick's years at Indiana University (1964–1966) in pursuit of an M.F.A. under Alma Eikerman nurtured an incipient vocabulary, not so much of style, which at the time was going through the growing pains of Scandinavian modernism, but of a liberating conceptualism and abstraction that lay the groundwork for Schick's experiments of the 1970s. In Alma Eikerman's philosophy Schick discovered a sensibility that devalued technique in favor of free play on the "idea" of jewelry.

Eikerman's abstractions conform to an internal logic that corresponds to Schick's reliance on a grid system in her own constructions. Eikerman finds the lyricism of "energy forms" in natural objects, while Schick discovers her own brand of tensile energy through considerations of solid and void and fracturing of objects. Constance Bowen in "A Tribute to Alma Eikerman" claims that she "introduced the third dimension into her work. Her designs create complex but definable space, far removed from the simple



Opposite, top left: *Papier-mâché Bracelet* (one of the first), 1967; **bottom left:** *Neckpiece*, mid-60s; **top right:** *Body Sculpture*, painted newspaper, 1974–75; **Bottom right:** *Slat Dress* (left), newspaper 1974, *Head Sculpture*, papier-mâché over wire, 1968-9, worn at the Renwick Gallery performance, 1986. **Top right:** *Ring*, silver, late 70s. Photo: Joel Degen; **Right:** *Brooch*, painted wood, rubber, 8½ × 7¾ × 1¾". Photo: Gary Pollmiller



three-dimensionality of even the highest relief-work. Using the interplay of lines and planes, building boxes or, later, stretching bulges, she engages the viewer in intricate spatial puzzles."[1] This testament could easily underscore the aggressive scale, spatial complexity and arresting emotion of Schick's mature work.

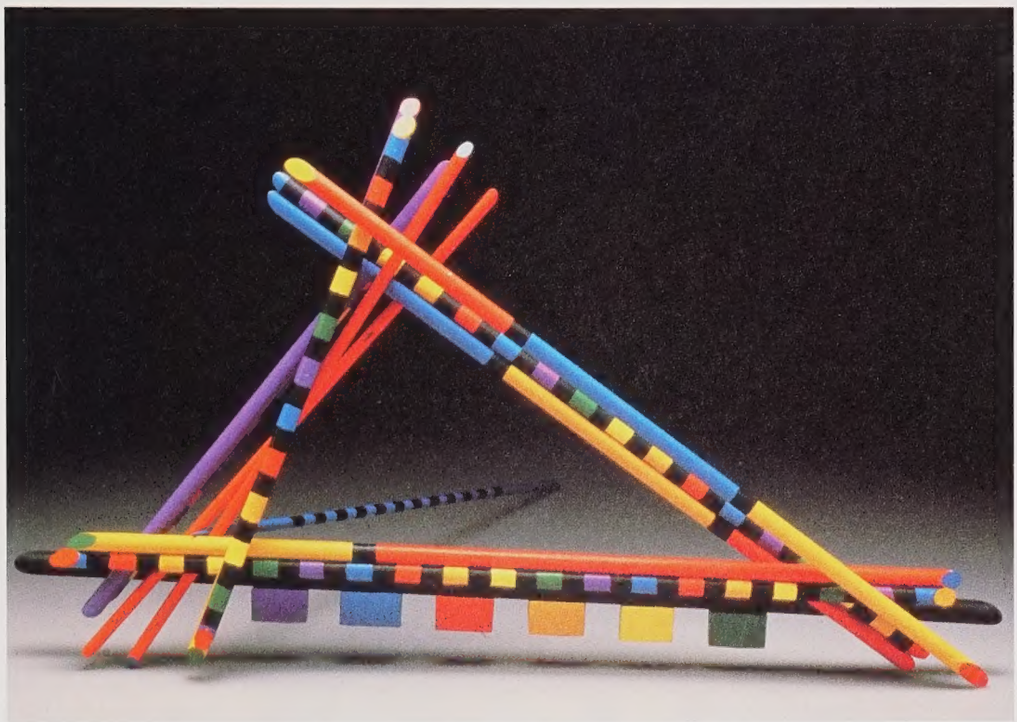
Eikerman's dedication to creative freedom provided an environment for Schick's radical directions that led to an intuitive pursuit of happenstance, necessity and personality in experimentation. Her informed intuition is apparent in her use of ordinary materials from local stationery stores and junkyards: wood dowels, cardboard, leather tongs, sewing thread and fibers, starter-set acrylics, shoelaces, papier- mâché, probably the most debased of craft materials, rubber tubing, scrap metal and forming rods. Never a skilled metalworker by her own admission, she excels at improvisation—fabricating her own rivets for binding dowels, tying with leather, thread or rubber and wrapping papier-mâché around old coat hangers.

Marjorie Schick is a metalworker, nonetheless. Her graduate school pieces reveal her early preoccupation with line and movement: the fibers, tubing, surface stripes, the flourishes and sinuous calligraphy of metal rods abstract the essential qualities of metals' composition. Line tracks the very movements in chasing, engraving, the edge of sheet metal or the wrapping of silver wire.

Her pursuit of "drawings in space," of rendering line in three dimensions devoid of material connotations, marries these two seemingly discordant directions in the flowering of the wooden dowel constructions of the late 70s and early 80s. As jewelry, in empathy with the skeletal formations of the wrist and shoulder, these linear structures extend the space of the body and establish an energized field where jewelry and wearer interact. The composition attains a musical effect, surrounding the wearer with a variety of tones and cadences. By modulating the direction, width, length, repetition of the dowels, Schick creates complex rhythms. The long, powerful dowels, sliced obliquely at their ends, suggest infinite extension, almost like a continuous tone that resonates indefinitely. Short, stubby dowels, like staccato beats, punctuate the rhythm, while a crescendo is heard in the explosive chords where lines intersect, collide, abut. We respond to the repose in the monotone parallels, to the coldness of the verticals and the warmth of the horizontals. The repetitions of color and line dance in syncopated fashion. There is an expressive quality in this labyrinth of graphic notation. The dialogue between surface and skeleton, between tensile constructions and implied space, between the artist's sculpture and the body's adornment, the amplification of line and the power of color, is the syntax for an expression which is emotional rather than intellectual.

Schick's compositions seem to begin with color and then become energized with its exten-

Brooch, painted wood, bark, 6¾ × 8¼ × 1", 1985. Photo: Joel Degen



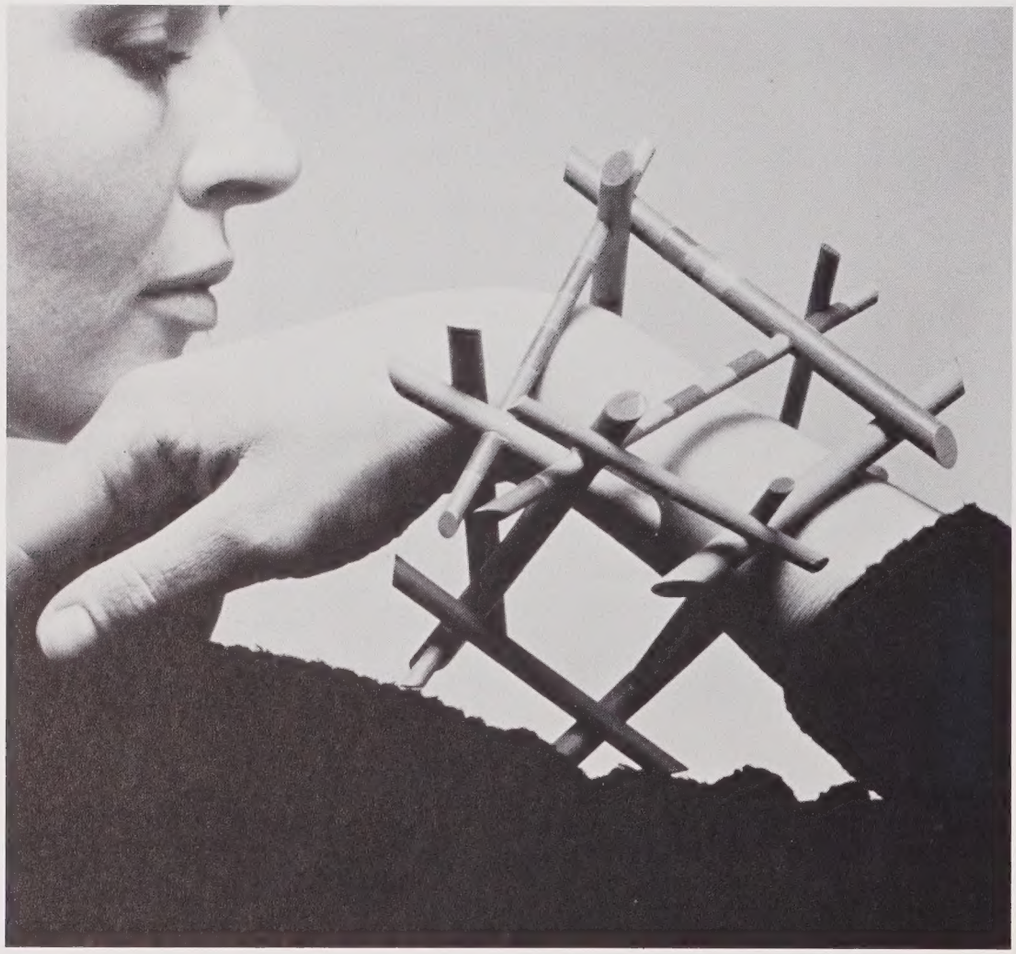
sion in size, area and direction.The fluid pulse of the repeat patterns is reminiscent of Mondrian's *Broadway Boogie Woogie,* yet her ability to translate the rhythms into three dimensions reinforces the significance of chromatic expression. The heavy monochromes that usually appear on major dowels anchor the compositions, like a sturdy back beat. The varying weights of black bands act as rests that prepare us for the glissandos further along the dowel. Schick carries us along with asymmetrical phrasing, fast angular melodies and tumultuous chords of massed colors. Her music is not harmonious but expressive intonation, emphatic and provocative.

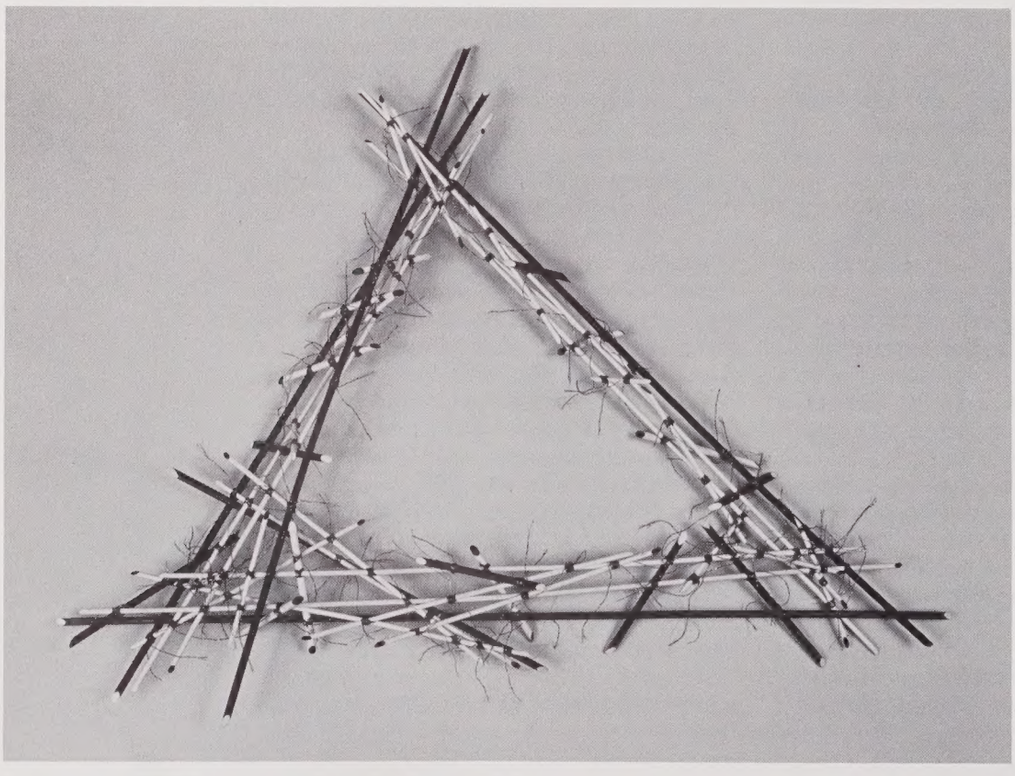
In a plastic sense, Schick's compositions maintain a lineage with constructionist art. Although there are associations with the formal geometries of David Watkins in Britain and Herman Hermsen in Germany, the ability to forge a volumetric shape through massed lines emphasizing three-dimensionality and transparency links Schick more readily to Lipschitz, Gonzalez, Giacometti, David Smith and Calder. Giacometti's *Suspended Ball* (1930) and *Cage* (1931), Picasso's collaboration with Gonzalez in the *Constructions* (1928) and Calder's wire drawings come to mind as antecedents for (in art historian Albert Elsen's characterization) the creation of "palpable form in space and palpable space in forms."[2]

It is surprising to reread Clement Greenberg's 1948 essay "The New Sculpture," which recognized this movement toward constructed metal objects. Greenberg's narrative opens with the omniscient Picasso experimenting with collage as surface to achieve an illusionary depth. By raising the affixed material of the collage above the surface, he entered the realm of relief. Subtracting the surface entirely—to let what had originally been affixed stand free—he created a construction. According to Greenberg, "the human body is no longer postulated as the agent of space in either pictorial or sculptural art. Now it is eyesight alone and eyesight has more freedom and invention within three dimensions than with two."[3]

With the body as surrogate picture plane, jewelry's progress has followed the route described above from collage upon the surface to bas relief to free-standing sculpture. Marjorie Schick's discrete position within this tradition retains the human body as the agent of space while maintaining a hold on abstraction. Space is here to be shaped, divided, enclosed, but not filled. Where Eikerman realized organic energy in natural forms, Schick found comparable energy in the relative space of the body. The eye that follows the linear movements of her pieces is not confined to the viewer but extends to the wearer. The unifying aspect of Schick's approach is the implied tension between foreground and background, between the occupied space of the wearer and the space at large of the jewelry. Just as Giacometti's *Suspended Ball* entices us to reach into the cage and activate the movement of the ball upon its fulcrum, we are enticed into Schick's enclosures to switch on its power. The

Bracelet/Brooch, painted wood, 6½ × 10¾ × 1¼", 1985. Photo: Joel Degen





effect is an optical one. The lightness and ephemerality are contrasted by the foreboding scale of these drawings in air. By circumscribing the limits of human power within her labyrinth she empowers the human being at his center, asserting the primacy of human vision. These skeletal structures posit the "weight" on the base of the shoulders, conditioning the wearer by laws of gravity and perception to confront the balance of tension in space.

On some, Schick's jewelry looks quite harmonious, while on others it appears an inflexible apparatus. The dichotomy of expression is not the sole responsibility of the piece but the dialectic with the psychological condition of the wearer. Ironically, in studio photos and catalog reproductions, models seem austere, pallid mannequins, apprehensive about their task, while on the other hand I have seen the animation and wonder in the faces of those who don these same pieces in a gallery or after a performance.

If there is a catalyst for the emotional response in the wearer, it is Schick's unabashed palette. The chromatic foreplay on the surface of the dowels traps our attention in the visual melody. Her gestural acrylics impastoed on gessoed wood resemble the garish rouge of a teenybopper gyrating to the latest Madonna record. The modulation between play and rest, contemplation and action, weakness and strength is the same catalyst that incites the performance pieces mentioned earlier. This chromatic effect has a conceptual affinity with the canvases of the 60s Pop artists. The liberation of the prosaic, the reintegration of art in everyday experience, the reaffirmation of the visceral experience, the accentuation of emotion and pastiche, the embrace of play and humor pulsate beneath the surface.

The demand for Marjorie Schick's work seems to come at a time when she is going through an experimental phase. There seems to be a restless journeyman attitude about the new pieces, rambling about formal and expressive details, dialogues with process and concept. There are ventures into monochromatic white palettes and zebralike variations in black and white. Raw dowels appear now and then, as well as natural twigs, which liberate line from strict geometries. Metallic thread, strings, rubber tubing are being used more often, not only as a method of elucidating the character of line but also for binding and fastening—as far from soldering as a jeweler might dare to roam.

The desire to create freestanding sculpture plagues Schick as it does many of her fellow jewelers who feel the onus of their heritage.

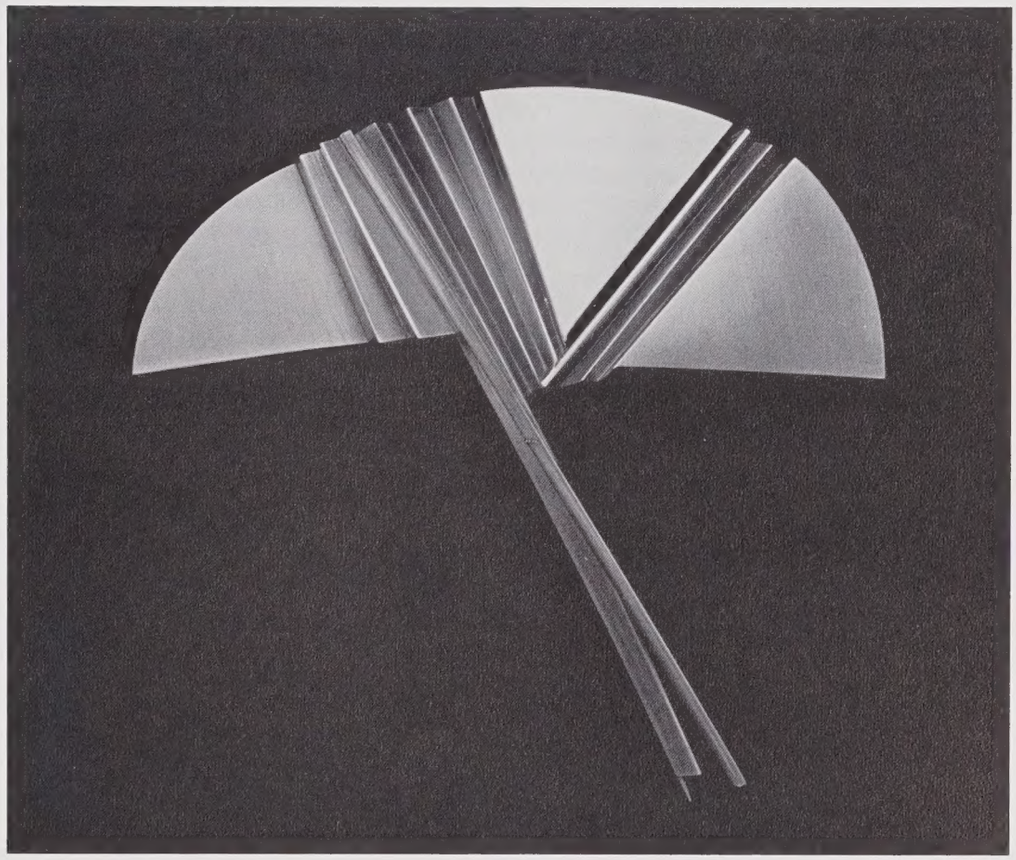
Above Left: *Bracelet*, painted wood, 1983.
Far left: *Pin*, painted wood, white birch, metallic thread, 19¾ × 18 × 2", 1985.
Left: *Necklace*, painted and tied wood, 19¾ × 24 × 2", 1984. Photo: James Mueller

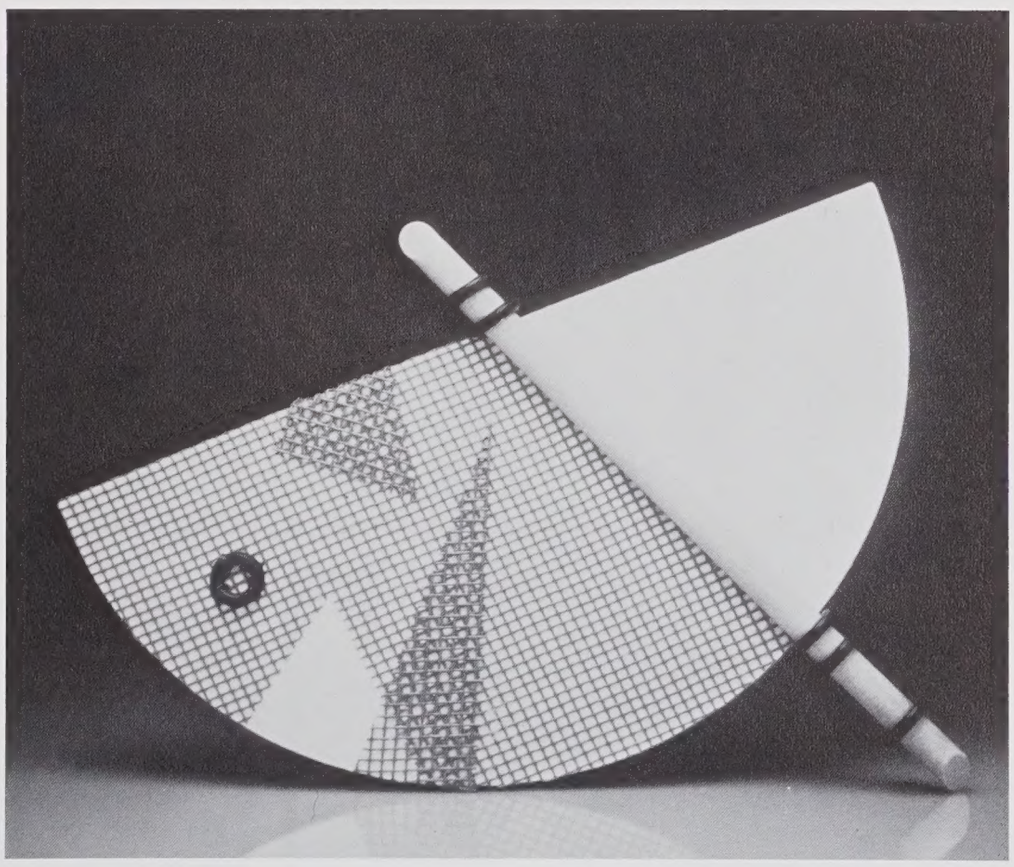
Much of the newer work is oriented toward the wall or pedestal rather than the body. Stickpins once used to affix pieces to clothing are now translated into foundation axes for sculpture sustaining its own weight. But her insecurity with moving beyond the jeweler's conceptual base of body scale renders this new work as maquettes for large-scale jewelry.

In comparison, the strength of Schick's body sculptures can be seen in her painted dowel piece, which has its stickpin running the complete width of the body. When hidden beneath the clothing, a dynamic is achieved by the long chord of floating dowels on one side of the body held in tension by the grace note at the other end of the pin. A similar effect occurs by suspending a large vertical piece upon one shoulder through the use of a rubber collar band. The image is one of bagpipes about to burst into a jig.

The return to the basic draftsmanship of point, line and plane has recently inspired a new direction in her work. Schick's use of half-circle paper planes, either as elements in her constructions or as fields for her drawings, incorporating perforation points, hair threads, mesh plastic and tiny dowels, offers another perspective on her preoccupation with line. In the dowel constructions, she had been exclusively concerned with the movement of line in space. Now, she seems interested in returning to planes as elements of equal importance, shifting tension from the space between wearer and jewelry to the interplay of forces on mass and surface.

Most of these changes appear as studies, working drawings for self-understanding rather than finished compositions. They convey the freedom and pleasure that comes from insouciant exploration. There is delight in the multiple pins that seem like exercises of imagination. Little crosses, zigzags, macaronis, cartoon characters dance around the dowels. It all makes me want to sit back, turn up the volume and let the good times roll.





Notes

1. "Reflections: A Tribute to Alma Eikerman, Master Craftsman," catalog, Indiana University Art Museum, Bloomington, IN, July 10–October 6, 1985, p. 16.
2. Albert E. Elsen, *Modern European Sculpture 1918–1945, Unknown Beings and Other Realities,* George Braziller, New York, 1979.
3. Clement Greenberg, *Art and Culture,* Beacon Press, Boston, 1961, p. 139.

Michael Dunas writes frequently on design and craft.

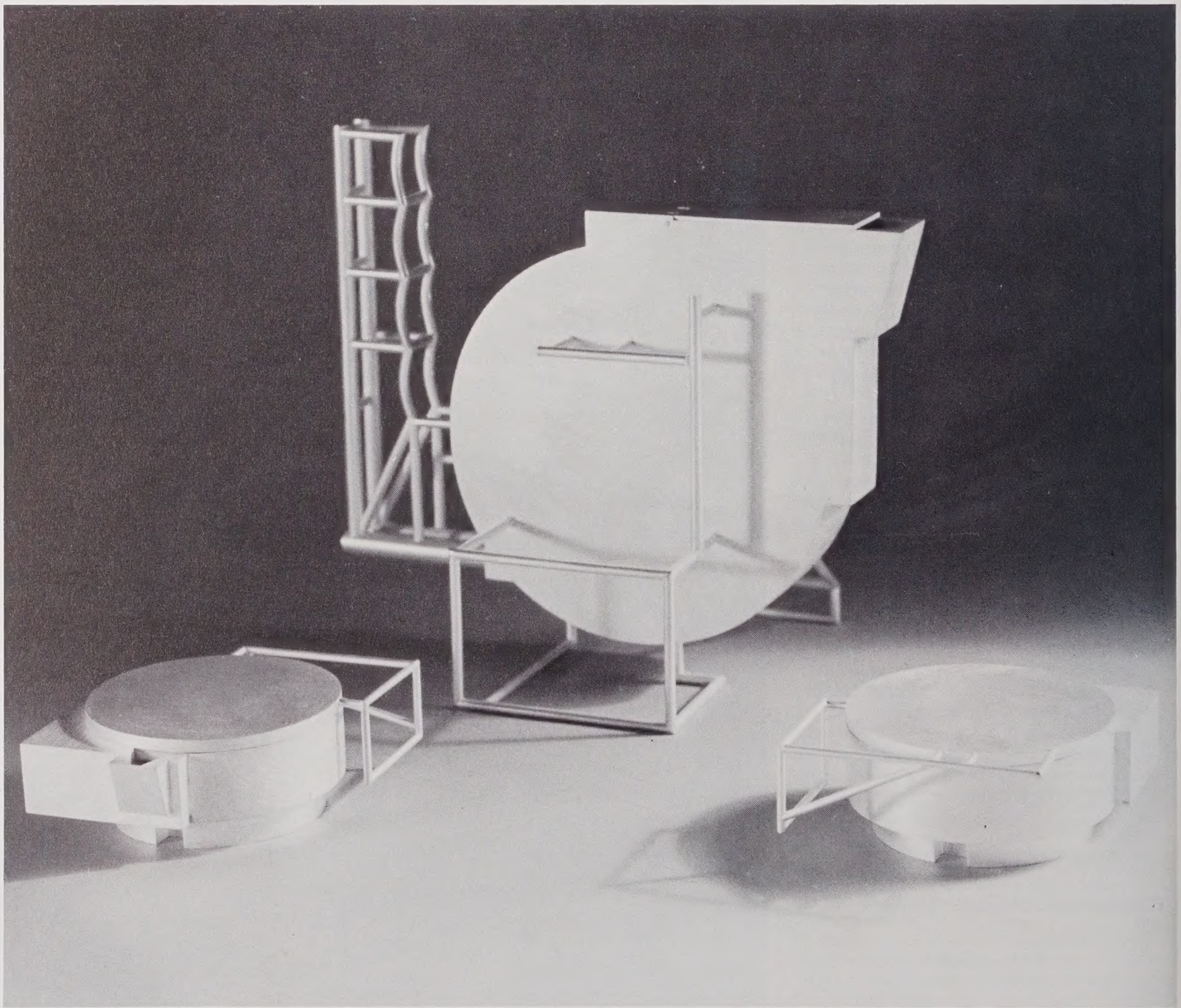
Above right: *Brooch*, sterling silver, nickel, 4¾ × 5 × 1", 1981–82.
Right: *Brooch*, paper, screen, wood, rubber, 1984.
Photo: Joel Degen

PROJECTS OF EXPLORATION STUDENT WORK

This is the first in a series of projects for students, created to provide a forum in *Metalsmith* for provocative and innovative work from the United States and Canada. We determined that a problem-and-solution approach would be fair and open, encouraging creativity and exploration. We hope to publish two such articles a year, and thus provide exposure to some of the most interesting new metalwork being produced in colleges and universities today.

The projects will be assigned by a different professor each time. In this way, we hope to spotlight issues in all areas of metalwork, from sculpture to production jewelry, from scale to preciousness. The first project—housewares—was assigned by Bruce Metcalf, a professor at Kent State University, Ohio. Submissions for this project are published here. Information on the assignment for the next project appears at the end of the article.

PROJECT 1: HOUSEWARES



Above: Lisa Norton, *Espresso Service*, Cranbrook Academy of Art, MI. **Right:** Randy Seerup, *Nagel Impersonation* clock, nickel and sterling silver, nu gold, clock mechanism, 11½ × 7 × 2½", University of Illinois. **Far right:** John Baird, untitled light, conduit, fencing, hardware cloth, tin, plexiglass, electrical hardware, rubber, wood, 99 × 20 × 6", University of Michigan

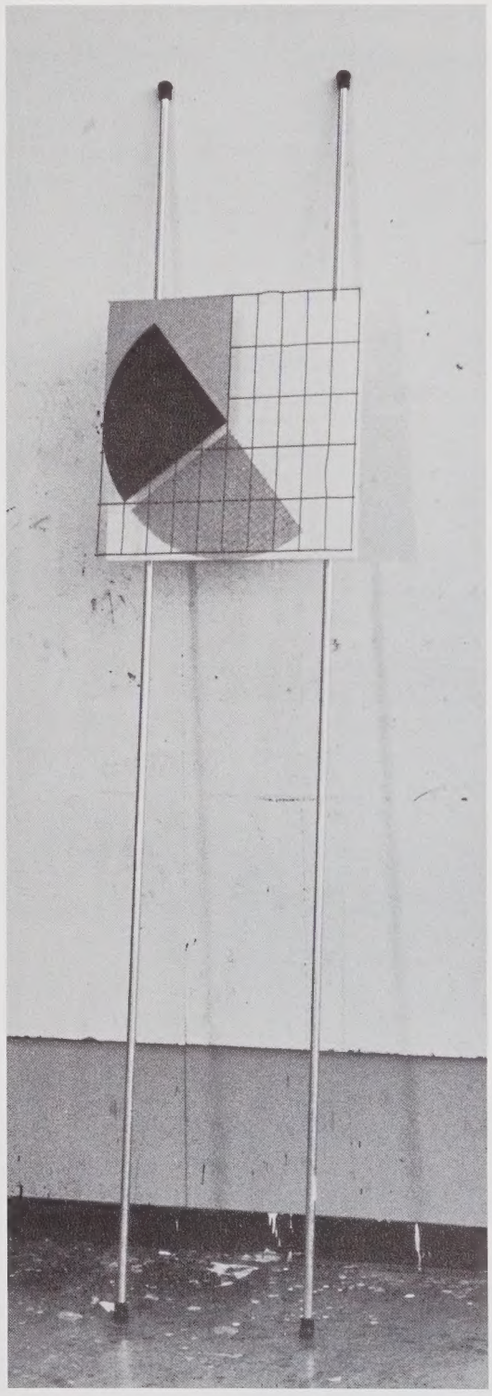
The idea of housewares is relatively new to this field. It does not imply the same limits as "silversmithing," because that term is fettered by historical associations and by the exclusive use of a single material. Housewares can include traditional smithed objects as well as clocks, lights, trays, serving utensils and cooking implements. With the attention recently focused on the Memphis group from Milan, young designers have shown a renewed interest in functional objects made for daily use. Not only the lure of economic gain, but also the excitement generated by radical new styles, has stimulated this curiosity.

I didn't know how strongly the entries would be influenced by Post-Modern design, but I was a little afraid there would be a flood of second-rate Memphis lamps, clocks and tables. In fact, the spectrum of entries was quite broad, ranging from fairly conventional polished silver teapots, to a mousetrap, to highly sculptural lamps. If there was a dominant direction, it was set by received notions as to the limits of metalsmithing. I saw a fair number of shallow bowls, necked-in vases and geometric, fabricated box forms, which, taken together, seemed to describe a boundary of what has been permissible. Although specific forms and details may have been new, the overriding impression was one of familiarity. The teapots still looked very much like teapots, and the bowls clearly announced that they were bowls. Although nothing is wrong with a sense of familiarity, I was more interested in work that confounded my ability to name an object's function just by looking at its form.

Make no mistake, my preference for the unconventional is subjective and deeply personal. I make no claim to detached fairness here. The work I chose reflects my taste for the unpredictable.

Three of the six selections are lamps. The combination of light and metal has been with us since smiths started making candle sconces, but these three objects seemed to transcend the customary. Isabel Hurd's small lamp reflects and projects light in a most interesting way, while Rosa Silver offers a bent tube of striped glass stuffed with Christmas-tree lights. John Baird's structure is not at all like any lamp I have seen, leaning as it does against the wall. Furthermore, it does not rely on tricky technique to become a strong design.

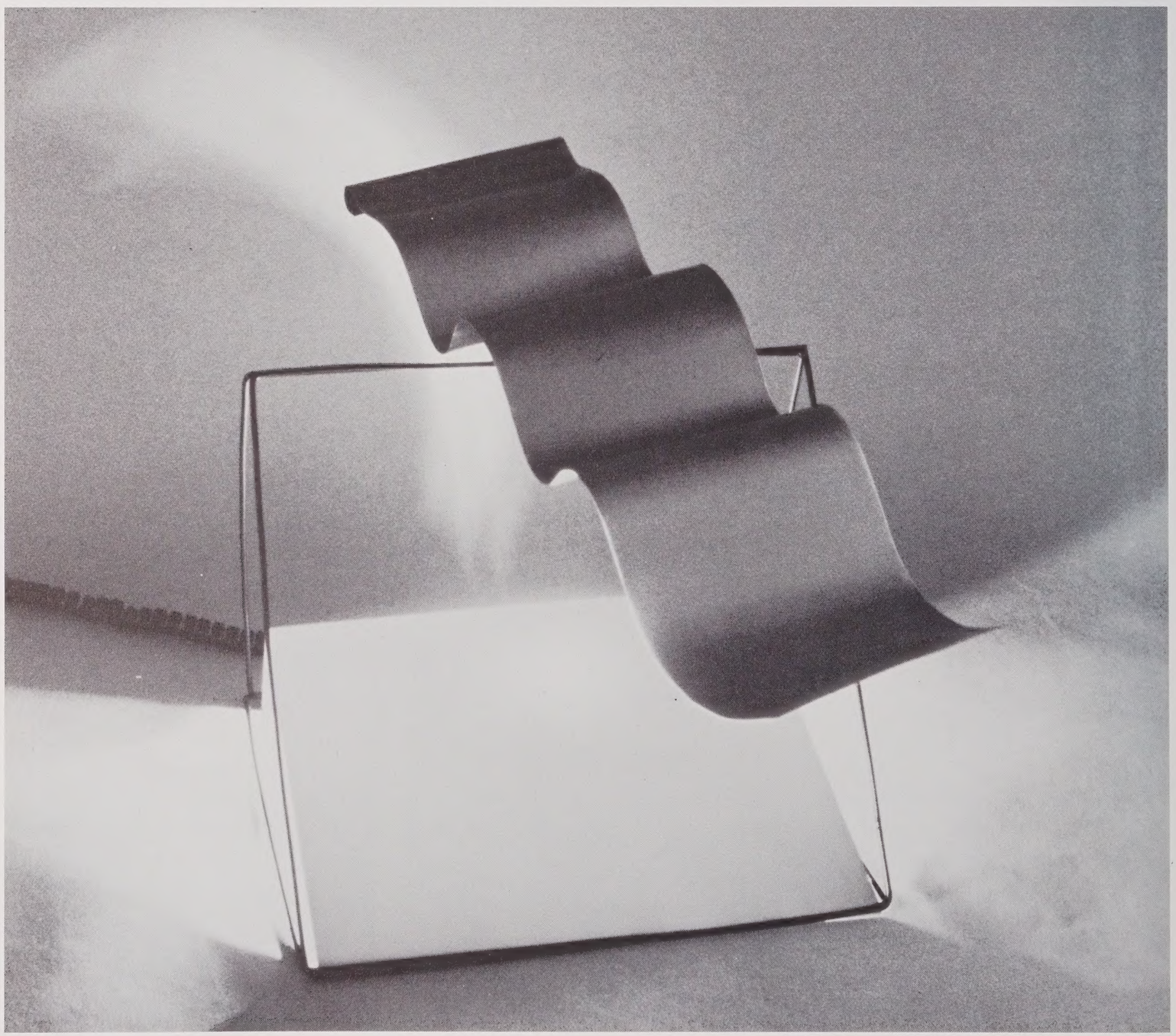
Randy Seerup's clock is a tribute to designer Patrick Nagel, but the stylish figure translated into a metal timepiece is surprising and original. Lisa Norton works with elements more familiar to the silversmith—hard-edge geometric form lines of wire—but her novel combination of the two lifts her espresso service above everyday Neo-Constructivist design. And while Jim Hopfensperger's *Work in Progress #6* may be the most Post-Modern of my selections, there is still an abrupt and amusing quality in the way he has juxtaposed sphere, hemisphere, cone, rod and squiggle.

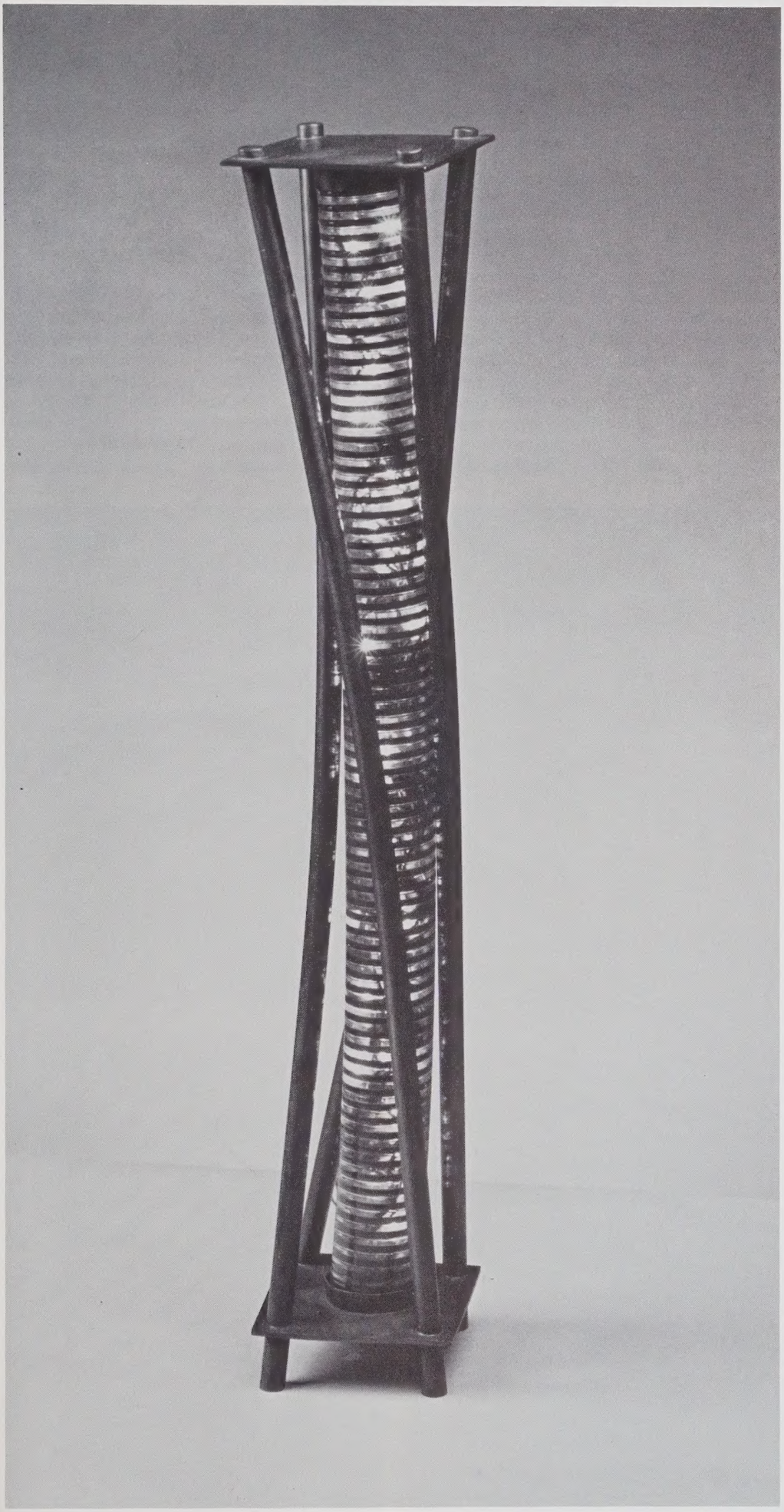


Each of these works strikes me as being adventurous and ingenious. Each appears to be put together well enough to avoid having poor craftsmanship distract from form or function. (It is difficult to judge the quality of craftsmanship from a photograph, however, and impossible to determine how well a piece functions.) But above all, these six works seem to be well resolved on every level of design. Each part appears to belong exactly where it is, and no design would be greatly strengthened by additions or deletions. Concept, design and craftsmanship are properly mated in every one of these pieces.

I want to thank the 27 individuals who submitted designs for housewares. For this series to become an ongoing feature in *Metalsmith* depends on the participation of students and the input of teachers.

—Bruce Metcalf





Top left: Jim Hopfensperger, *Work in Progress #6*, copper, plexiglass, auto paint, 8 × 6 × 6″, University of Michigan. Photo: Peter Kaniaris. **Left:** Isabel Hund, light, plexiglass, aluminum, brass, paint, 8 × 8″, San Diego State University, CA. **Above:** Rosa Silver, *Twisted Lamp*, Carnegie-Mellon University

PROJECT 2 PERFORMANCE AND BEYOND

For the second project, assigned by Sharon Church, Head, Crafts Department, Philadelphia College of the Arts, we are seeking student work that goes beyond the normal purview of traditional jewelry design: Ornament that fully engages the space around the body, amplifying movement, perhaps even altering one's perception of the human form. These are pieces that very well might relate to performance, theater or dance. Or they might simply demand a far greater interaction with the wearer than a single pin or necklace. Work in all media is acceptable; and it must be shown on the body.

Deadline for submission of work for this project is November 1, 1986. Students submitting work must be currently enrolled in an undergraduate or graduate program. Send black-and-white photos or slides to: Sharon Church, Philadelphia College of the Arts, Board & Pine Streets, Philadelphia, PA 19102. Please supply with the photos: student name, school, address, phone number, title of work, materials, size, date executed, photo credit.

BEYOND THE BENCH

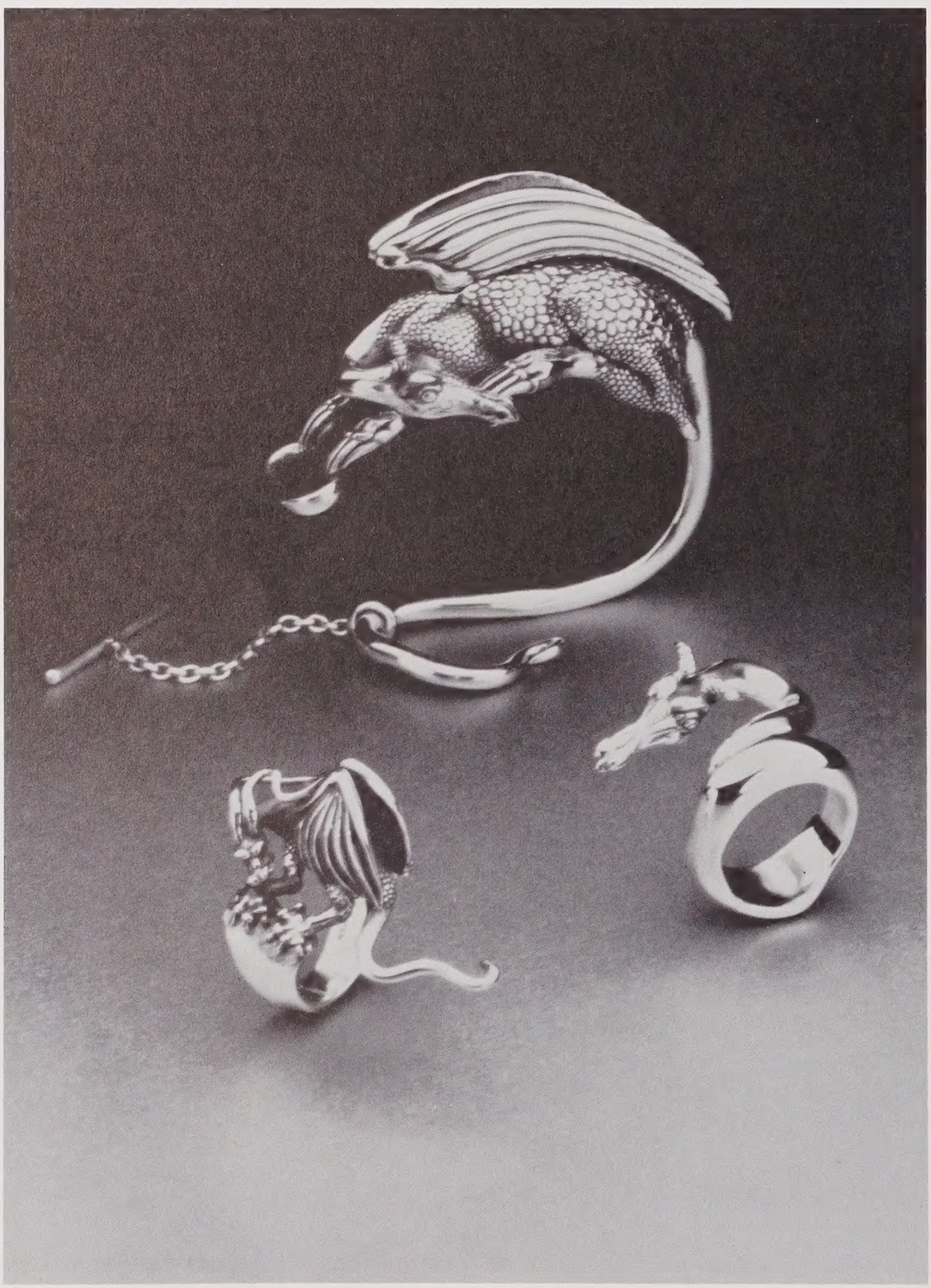
by Akiko Busch

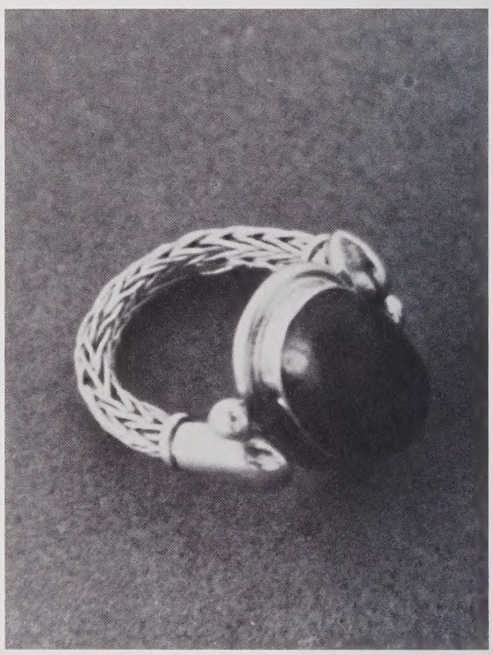
This is the fifth in a series of articles about production jewelers: design, marketing and business

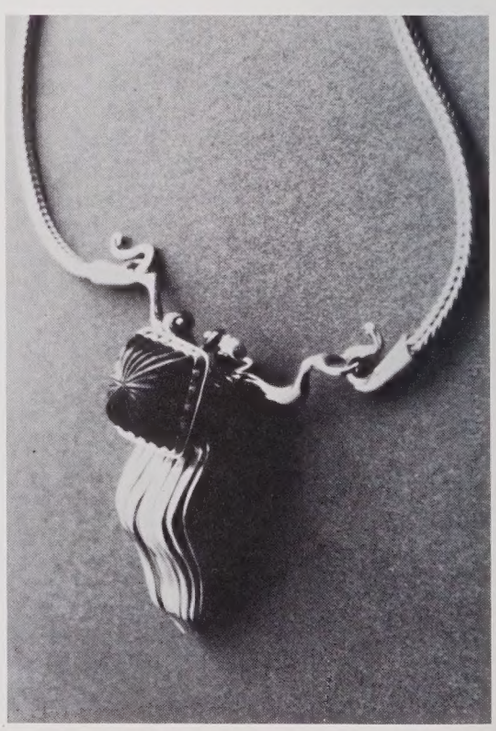
ONE IS SILVER

Woodstock, Connecticut

Designer: James R. Yesberger
Description of Jewelry Line: Yesberger's background in costume jewelry design is evident in whimsical and imaginative animal motifs. Both handmade and cast, the menagerie includes dragons, unicorns, horses, hippos, ducks and dolphins in bronze, sterling and 14k gold. Rings, pendants, letter openers, boxes and bracelets are highly detailed and convey both elegance and humor. "Conservative collectible" is his own description of the line. A decade old, the line is added to regularly.
Business Setup: Yesberger is the sole owner and artisan of his business. His work is sold wholesale and retail, gaining visibility through the craft fairs in Springfield, Philadelphia and Baltimore as well as at JA. His work is also professionally photographed for a direct mail catalog that is sent to craft galleries throughout the East Coast and jewelry stores across the country. Pricing is done by instinct and by comparison shopping rather than by any strict formula, which is perhaps an advantage—and luxury—of a limited line managed by a single craftsman.
Education: Yesberger studied jewelry techniques with John Paul Miller at the Cleveland Institute of Art. While neither prepared him with any business training, he feels that he was nevertheless adequately equipped to manage a limited-production line.







ALAN REVERE — JEWELRY DESIGN

San Francisco, California

Designer: Alan Revere

Description of Jewelry Line: Revere's production pieces, in 14k gold in combination with other materials including niobium, diamonds, platinum and pearls, address a commercial, high-fashion market. To meet this market, the pieces must acknowledge its demands; and, not surprisingly, the line changes regularly, with a major collection of new designs every six months. He describes them as being "a combination of traditional goldsmithing techniques with modern esthetics and state-of-the-art technology. My work stands with one leg firmly rooted in fine commercial jewelry and the other dancing to the music of contemporary art/craft jewelry."

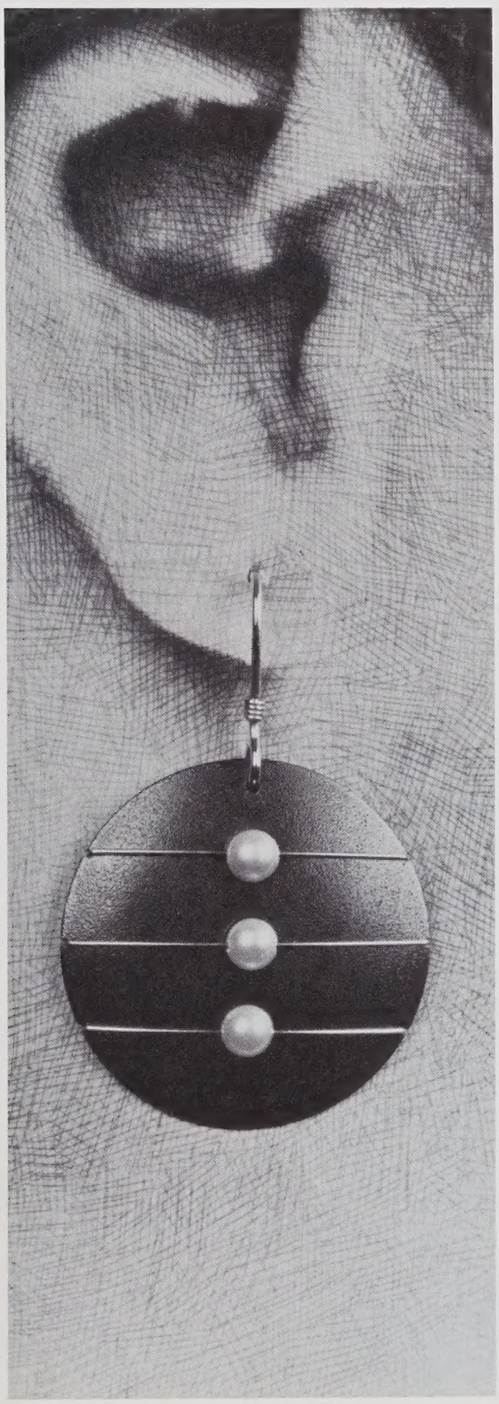
Business Setup: Revere is sole proprietor of his studio, employing five full-time and three part-time assistants. Earrings and bracelets are fabricated in-house, while cast rings are contracted along with setting and lapidary.

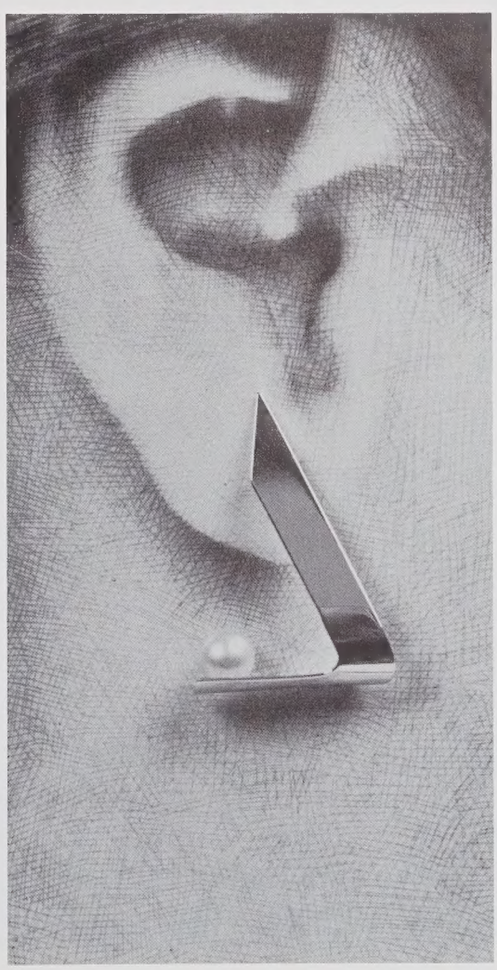
Ninety percent of the work is sold at wholesale, 10 percent at retail. Revere also exibits frequently at ACE shows and at JA. Aside from this, he says, he uses "no sales rep, no calls on stores, no phone calls, no catalogs for new accounts." With his work being sold at approximately 150 jewelry stores and craft galleries nationally, marketing is more effective and practical when done on a large scale.

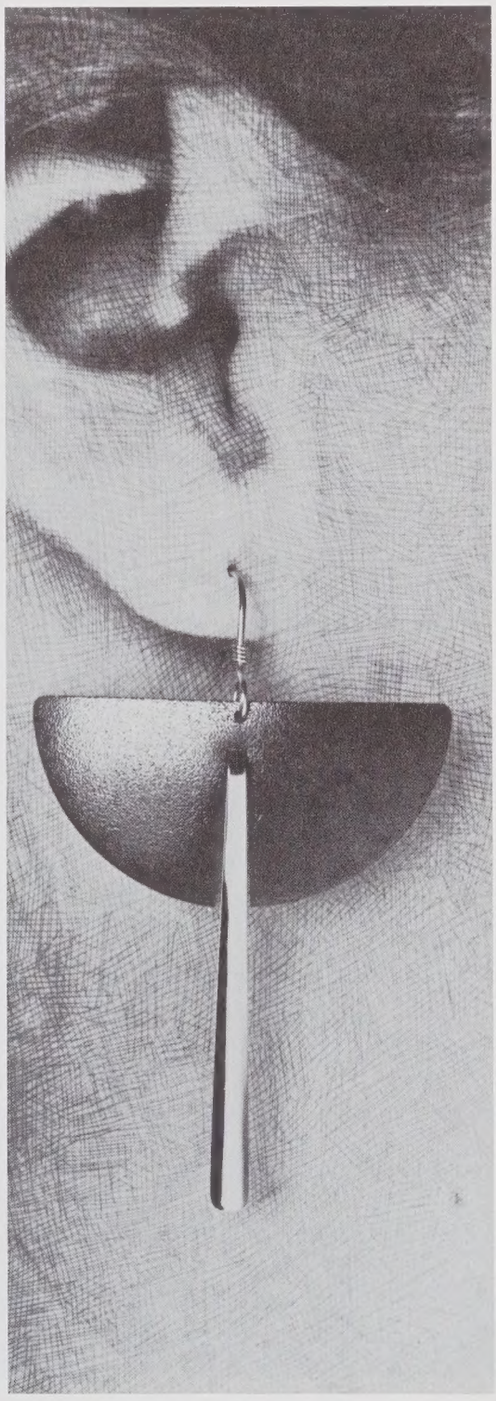
Education: "It is almost impossible to receive a practical jewelry education in America," says Revere. "One can attend traditional academic institutions, but the professors are almost invariably out of touch with the reality of making a living at the bench. And apprenticing is often an excuse for an employer to pay minimum wage for as long as possible. And when that rare master craftsman is found who is willing to share his skill and techniques, he is usually sadly lacking in teaching skills."

Revere received his own formal training in goldsmithing and jewelry in Pforzheim, West Germany, where the guild system is more strictly observed. The program includes an apprenticeship of two years of schooling and one-and-a-half years of supervised work, followed by an exam. The apprentice then works towards the master goldsmith level, working for five years as a goldsmith and taking one more year of schooling and another exam. Only master goldsmiths are permitted to teach. This system not only structures training, but demands and develops patience.

Revere has tried to install some of the same rigors and rewards of that system in his own program, the Revere Academy of Jewelry Arts established in San Francisco in 1979. "This is a field where very few people share their knowledge," he admits. "I feel I'm a link. I was able to tap into something and bring it over here."







KEATING DESIGNS, LTD.

Aspen, Colorado

Designer: Scott Keating
Description of Jewelry Line: Strong geometric lines, rectilinear planes and the play of positive and negative space distinguish the 14- and 18k gold pieces. Clean surfaces and edges are punctuated by diamonds and other gemstones. While all the work is made by hand, its clean surfaces and general sense of refinement do not attest to this. Six pieces are added every six months, resulting in a regularly expanding production line that meets a high-fashion and commercial market. "The line is designed to be a saleable product," Keating explains, "so even though I design to my own desires, I may integrate popular concepts, such as the extensive use of color in contemporary fashion, or the trend to larger pieces."

Business Setup: The more complex pieces are constructed in-house with the help of three full-time and one part-time apprentice, while simpler pieces are made in contracting shops. A new, high-fashion line of 20 pieces in 18k gold and precious stones is currently being produced in Hong Kong.

Keating has found JA a highly successful and profitable trade show; recently, he was one of 12 designers whose work was selected to be shown in the New Designer's Room there. He also markets his work through galleries and stores, promotional mailings, studio open houses and fashion shows. "Any exposure that gets your name known to the public and to the industry is beneficial," he says, but he notes further that, because his designs are unique, they have more impact when shown in groups.
Education: Keating received a B.F.A. from the University of Illinois and is also a graduate of the Gemological Institute of America. His commercial expertise, however, was acquired largely through apprenticeships in trade shops and by establishing his own studio. While he especially values his undergraduate study with Robert von Neumann, he admits, in retrospect, that "Apprenticeship under a master jeweler as they do a lot in Europe would be the best education."

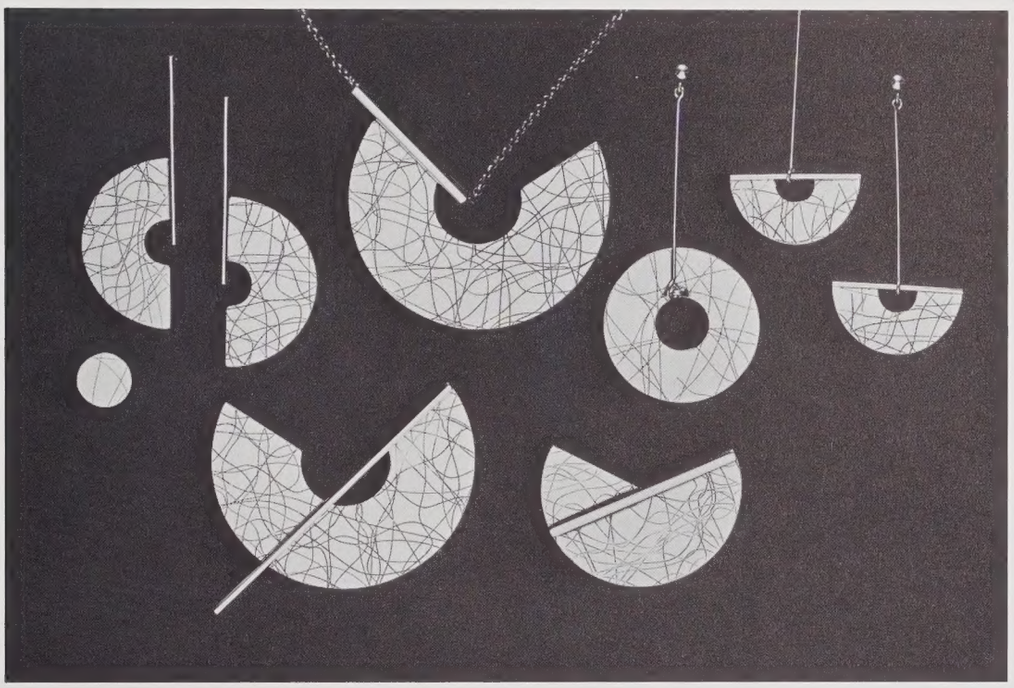
LETKI DESIGNS

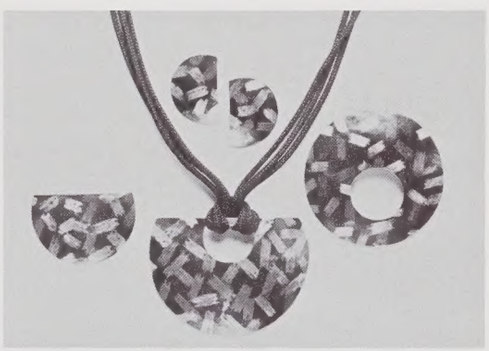
Toronto, Ontario

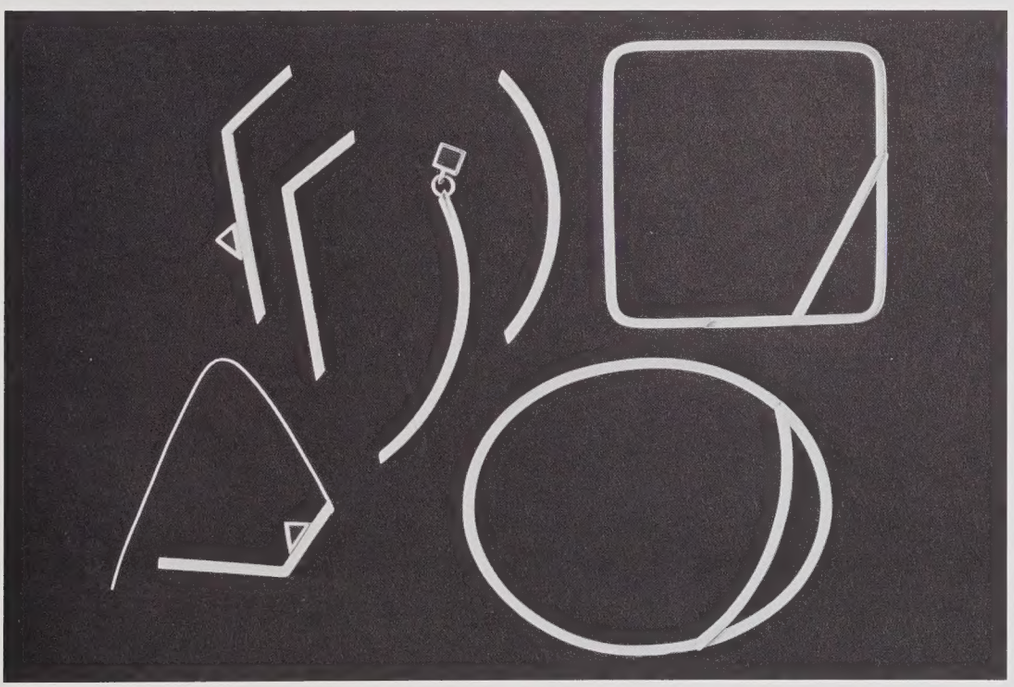
Designers: Michael and Paula Letki
Description of Jewelry Line: The sterling and 14k gold line is constituted of circular and other geometric shapes, which are then distinguished by a variety of surface finishes and designs. By incorporating industrial polyester resins in their work the Letkis can make use of unusual colors that they find appropriate for use with precious metals; their designs are frequently distinguished by their strong graphic or pictorial surfaces. "Involvement in technique," they explain, "is often a trigger for a whole series of pieces." The Laser collection, for example, has a surface design that suggests 50's Formica. While the wearer is important and the jewelry wearable and functional, the line nevertheless promotes the notion that jewelry is art.

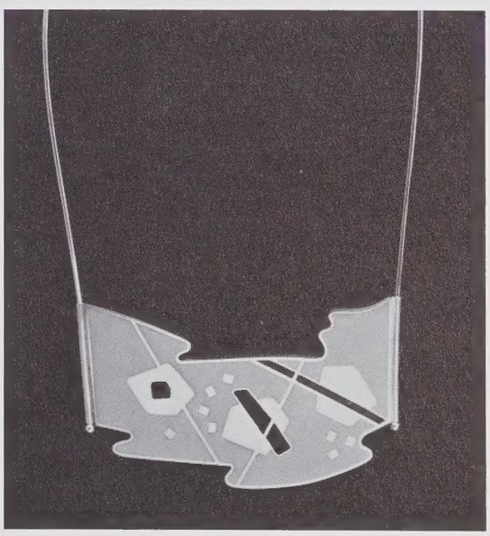
Business Setup: The notion seemed radical in Toronto 15 years ago when the studio and partnership were established. Since then, over 25 apprentices have worked in the studio. The work is sold wholesale and on commission, as well as through their own retail store in Toronto. Until recently, the Letkis did not attend fairs, although they did find Accent on Design in New York helpful.

The Letkis have found that their production business now needs streamlining. "We have realized that, by limiting our range, we will be able to do more work in other areas." Streamlining includes remodeling and upgrading the studio, as well as the promotion of the work of other metalsmiths. "By limiting the range of our production line," they explain, "we hope to achieve larger and more regular orders." A long-term goal is to establish relationships with high-end retail stores across the U.S. and to produce an ongoing line addressing their specific markets. They also intend to continue to produce one-of-a-kind jewelry and holloware, finding that it "continually expands our technical and creative horizons."
Education: The Letkis studied jewelry at Loughborough College of Art and Design in Leicestershire, England. Paula Letki has also studied Industrial Design and has worked as a product and interior designer. Both have worked as apprentices, and both have taught at various levels.









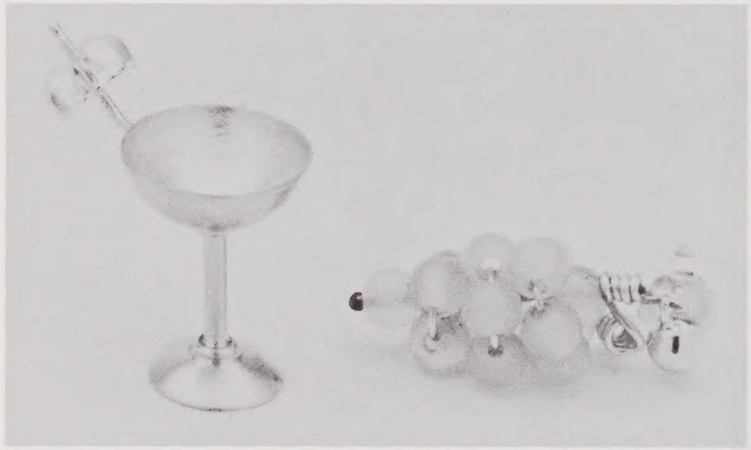
PEGGY JOHNSON JEWELRY

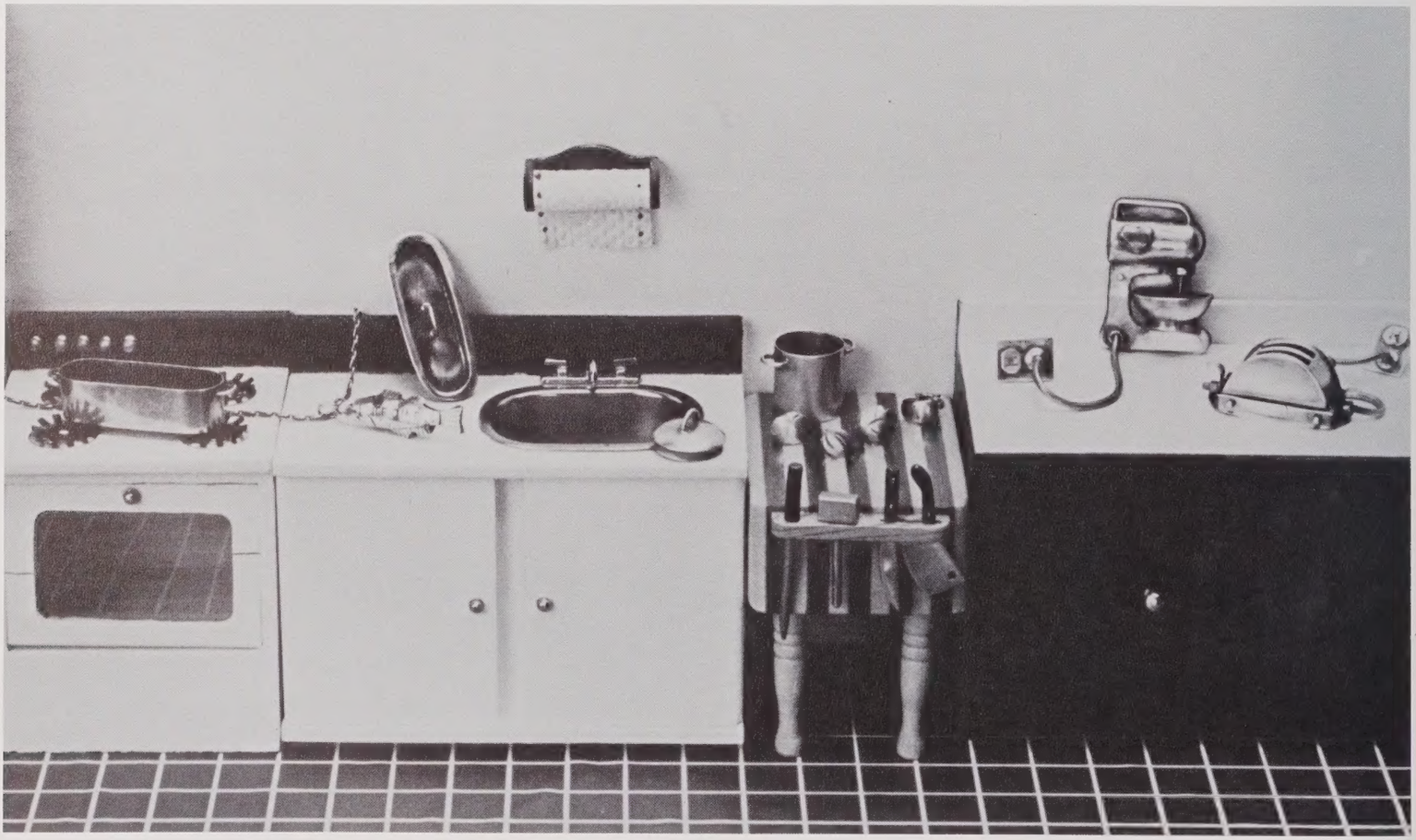
Philadelphia, Pennsylvania

Designer: Peggy Johnson
Description of Jewelry Line: Mixers, toasters, cups, saucers, pots, pans and even percolators make up Johnson's HouseWearables collection. They are rendered, however, in sterling silver, 14k gold, copper, acrylic, black onyx and some gemstones, rather than the chrome, aluminum and plastic we conventionally associate with such utensils. "They are little sculptures that can be worn," says Johnson, "and that continue to evoke memories associated with them."

Cost and marketing considerations—printed material, photos and drawings—necessitated "an easily reproducible line of jewelry." Each piece, however, looks, and is, handmade. Metal is shaped with mandrels and pliers; further techniques are piercing, repoussé and stamping.

"Designing the process for me is part of designing the piece," says Johnson. "In that the same design is repeated many times, refining the process allows me a freshness of approach and a continuing search for an easier and more efficient way."
Business Setup: Johnson is sole owner and designer of the business. She markets the line through promotional mailings and occasional personal visits to stores and galleries. She also attends at least one ACE show per year and various retail shows. She has found the shows the most effective marketing tool, as they afford "the space and opportunity to show my jewelry to the most ready public and wholesale buyers."
Education: Johnson is self-taught in both technical and business skills. Like most other production jewelers, she would opt, in retrospect, for the opportunity to take more business courses. And also, like most production jewelers, she did not anticipate making a production line, so learned the business end of it through apprenticeships and first hand.





JUNE JASEN

New York, New York

Designer: June Jasen

Description of Jewelry Line: Jasen's enamel art jewelry has been compared to cutout dolls. Animated, whimsical, colorful, the figures are "puns of wearable fashions on clothing, which can be made to accent the wearer's wardrobe." Pieces can be customized for individual clients. Every three months new pieces are designed with a regard to contemporary fashion trends.

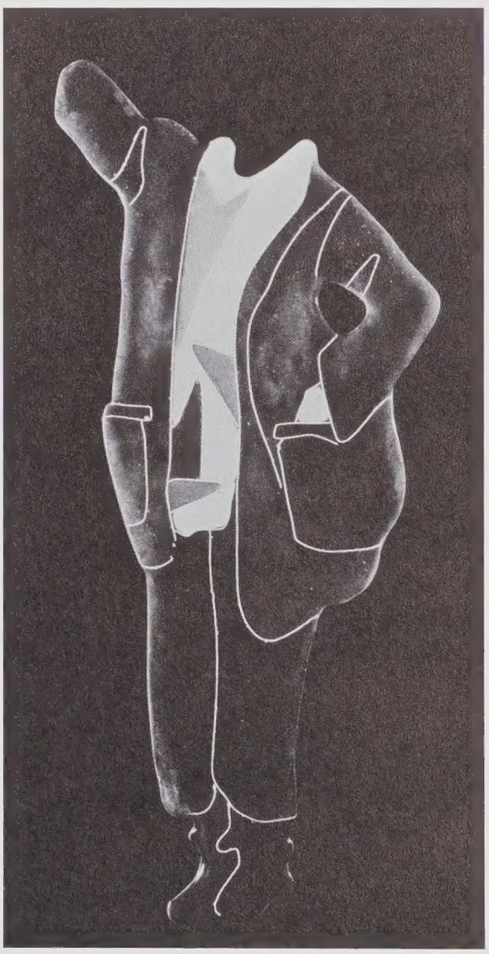
While the forms or images are made in multiples, each piece is individually sawed by hand and all cloissonné wiring is bent by hand. Colors and patterns vary from piece to piece, but most explore contrasts of opacity and transparency; flat enamels are juxtaposed with deeper color reflections of transparent ones. Low-fire ceramic materials are often sandwiched between vitreous lead-free enamel to suggest patterning and texture.

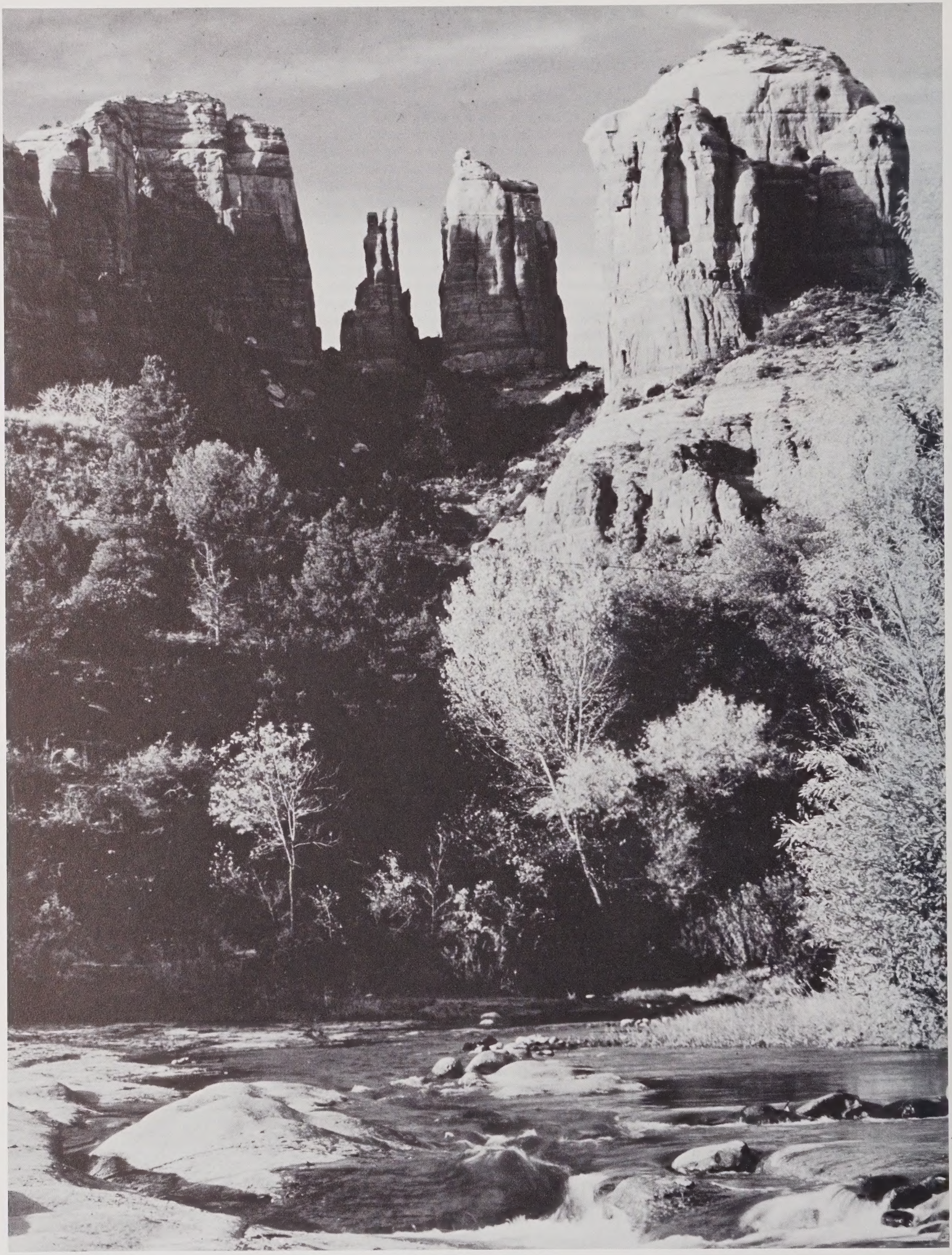
When not being worn, the pieces can also be framed on suede to work as small wall pieces.

Business Setup: Jasen is sole proprietor of the business and works alone. "I am harder on myself than anyone else would be," she admits, pointing out the rigorous self-discipline required to run a solo studio. Likewise, the pride in achievements as the work develops and matures is perhaps more intense.

Jasen produces about 150 pieces per year: Brooches start at $200; wall pieces might sell for as much as $1500. Thus far, gallery shows and exhibitions have been the most successful marketing tool, although she does also attend ACE fairs and Accent on Design. But Jasen stresses that even once the work has been accepted by a gallery or craft fair, marketing continues to be a decision-making process—what kind of PR, clerical and follow-up work need to be done, what the display will look like and who is directly responsible for sales are all questions then faced. And marketing goals expand proportionately with the line. Future plans include utilizing enamel in larger wall pieces that might be directed towards the corporate art market.

Education: Jasen's background in the fine arts included art history. She acquired her jewelry techniques through workshops and "the ever-famous school of hard knocks." Some educational business courses in dealing with galleries would have been helpful, she admits, but she is also quick to point out that "Sometimes I wish the galleries would take some courses too!"





Cathedral Rock, Coconino National Forest, Sedona. Photo courtesy: U.S. Forest Service

A Metalsmith's Guide to Arizona

by Betsy Douglas

Arizona is an immense state filled with vast beauty, incredible variety and rich resources—rich in natural wonders and in the hospitality of its people. Let me share some of my experiences and discoveries with you.

Most visitors who aren't coming by car fly into Sky Harbor Airport in Phoenix. There are many tour possibilities to help visitors see Arizona. Contacting the Arizona Office of Tourism and the Phoenix & Valley of the Sun Convention & Visitors Bureau is helpful for information on hotels, motels, resorts, rental cars, bus and air tours and Grand Canyon accommodations and mule rides. The Flagstaff Chamber of Commerce and Nava-Hopi Tours, Inc. also have tour information. Two useful in-depth guidebooks to Arizona are *Travel Arizona* by Joseph Stocker, published by Arizona Highways, and the *Sunset Arizona Travel Guide* by the editors of Sunset Books and *Sunset* magazine. Because Arizona is a spread-out state, the best way to see it is to travel by car. Let me be your guide.

Flagstaff

Let's first head north from Phoenix on I-17 to Flagstaff. It is about three hours if you drive straight through. However, there are some interesting sights en route. Of particular interest is architect Paolo Soleri's energy-efficient experimental city of the future, *Arcosanti,* two miles east of I-17 at Cordes Junction. There we can explore the grounds, watch Solari wind bells and sculptures being cast and tour the construction. Tucson jeweler/metalsmith Joe Harris recommends a visit to the nearby **Fort Verde State Historic Park,** where historic Indian, pioneer and military artifacts are housed in the old fort at Camp Verde off I-17. Another interesting place to visit en route is **Montezuma Castle National Monument.** This huge, well-preserved Indian cliff dwelling was built about AD 1100.

Back on the road, we climb to the top of the 2000-foot-high escarpment, Arizona's Mogollon Rim. Distant glimpses of the red rocks of Sedona appear to the west. Then the cool highland pine forest on the 7000-foot rim that surrounds Flagstaff welcomes us.

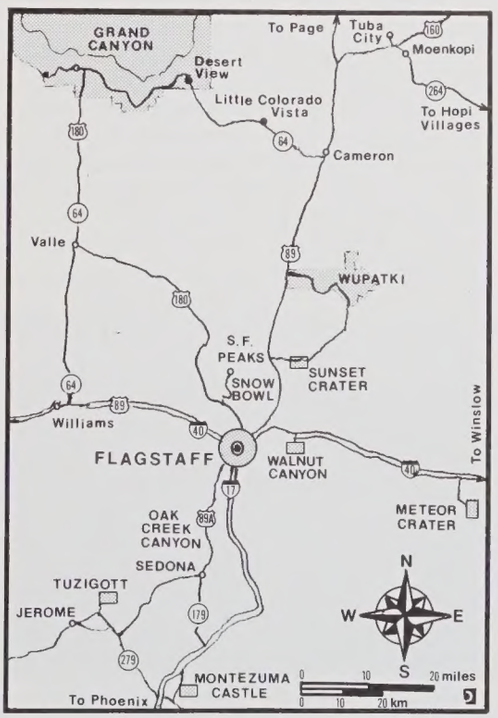
Once in Flagstaff, you must meet Joe Cornett, head of the metals department at Northern Arizona University. In the past Joe, who is a native of Arizona, has been the host of the Great West Metals Show and Symposium and is responsible for bringing many talented metalsmiths and jewelers from all parts of the country and Europe to Arizona to present slide lectures, workshops and demonstrations. He is the conference chairman for the "SNAG '86" conference at N.A.U. in Flagstaff this August. Bring a sweater because August in Flagstaff is delightfully cool. Temperatures range from the mid-50°s to the low 80°s F. Flagstaff enjoys a spectacular natural setting nestled at the foot of the majestic San Francisco Peaks.

After visiting the metals studio and N.A.U. Art Gallery, which will present the "Arizona Metal Artists Exhibition" during "SNAG '86," I would take you to the **Museum of Northern Arizona,** which features displays on the natural sciences, anthropology and excellent examples of the arts and crafts of northern Arizona. The museum shop has fine contemporary and traditional southwestern jewelry, rugs, baskets, kachinas, sculpture and pottery. The museum research facilities include the Skystone Foundation, which is assisting artist James Turrell in his Roden Crater Project. The **Coconino Center for the Arts** has changing visual arts exhibits and performing arts and will feature "Form Beyond Function," an exhibition of sculpture by SNAG members, August 11–September 3, 1986.

Lowell Observatory on Mars Hill, founded in 1894 by Dr. Percival Lowell, is one of the foremost astronomical observatories in the country. Among the important work accomplished here was the 1930 discovery of the planet Pluto, a planet soon to be visited by spacecraft Voyager. Lowell Observatory has the world's largest collection of over 2 million planetary photographs and is active in NASA's space science community.

Some places to enjoy in Flagstaff are lunch or dinner at Buster's Restaurant & Lounge at Greentree Plaza, or dinner at Lupo's Horsemen's Lodge (the trout is great), and western dancing at the Museum Club.

Flagstaff has been called the "City of Seven Wonders" because it is centrally located within two hours of some of Arizona's most remarkable attractions—the Grand Canyon, Wupatki National Monument, Sunset Crater, Walnut Canyon, Meteor Crater, Oak Creek Canyon and the San Francisco Peaks. It is possible to make a 205-mile loop trip from Flagstaff in a leisurely 2-3 days and see many of them, depending how much time you want to spend at the South Rim. Here is what you will see and some of the side trips I recommend.



Driving north on Highway 180, there is a dramatic view of the 12,670-foot-high Humphrey's Peak, the tallest of the **San Francisco Peaks.** Nearby is the Fairfield Snow Bowl, which attracts skiers from late November through late March.

The **Grand Canyon National Park** is only 82 miles north of Flagstaff. It is wise to make advance reservations if you plan to stay at the canyon. Carved by eons of wind and water erosion, the wondrous canyon is 277 miles long, 18 miles wide and one mile deep. Standing at the rim you experience an indescribable view of time exposed in the multicolored ridges, buttes and pinnacles revealed by infinitely changing colors and shadows as the sun arcs across the northern Arizona sky. Many artists have been inspired by the canyon. Linda Watson's sculptural sterling brooch *Amid My Maps of the Canyon* features delicate line drawing to suggest the rock strata. Canyon country has also subtly influenced the work of Phoenix jeweler John Hays.

In summer, a free shuttle bus will take you westward from Grand Canyon Village to an array of viewpoints that offer dramatic glimpses of the Colorado River winding through the gorge. A walk along the Rim Trail gives a closer look at the varied vegetation and the changing moods of the formations. A visit to the 80-year-old El Tovar Hotel gift shop enables you to see some special examples of Native American jewelry and other arts and crafts. The Hopi House also has native artworks on display. Heading east out of the park, you have a choice of many dramatic lookouts. The 70-foot watchtower at Desert View has interesting exhibits and vistas. For more information about the park and its facilities, write to: Grand Canyon National Park, Grand Canyon, AZ 86023.

Continuing east on Highway 64 you can view the Little Colorado River Gorge. At Cameron, head 20 miles south on Highway 89 until you come to the junction of the scenic loop that takes you to Wupatki and Sunset Crater National Monuments. **Wupatki** (Hopi for "tall house") is notable for its 800 separate ruins, ranging from small family dwellings to a 100-room pueblo built by Indians during the 12th and 13th centuries. **Sunset Crater** is a volcanic crater that erupted in 1065, producing lava flows, volcanic formations and ice caves. After exploring these unusual landscapes, return to Flagstaff via Route 89.

East of Flagstaff off I-40 are several scenic attractions. Driving 7 miles east, you will come to the turnoff for the 400-foot-deep **Walnut Canyon,** which shelters the 600-

year-old cliff dwellings of the Sinagua Indians. Forty-five miles east of Flagstaff off I-40, **Meteor Crater** marks the location where nearly 22,000 years ago a meteoric mass violently collided with the Earth, creating a crater 4,150 feet in diameter, 3 miles in circumference and 570 feet deep.

One of my favorite side trips from Flagstaff is the 20-mile drive on 89A south through **Oak Creek Canyon,** which offers beautiful scenery, cascading waterfalls and streams that lead you to the spectacular red rock country of **Sedona.** Slide Rock on Oak Creek is a popular cooling-off spot in summer. In Sedona, points of interest include the Chapel of the Holy Cross and Tlaquepaque, a Mexican-style arts and crafts village nestled under giant Sycamore trees. If you have time, the 6½-mile drive up the unpaved Schnebly Hill Road leads to magnificent vistas. Though not recommended for a passenger car, I have made it in a Mazda.

Continuing south on 89A across the river at Cottonwood brings you to turnoffs for the 800-year-old Indian ruins at **Tuzigoot National Monument** near Clarkdale. Following 89A up the slope of Mingus Mountain, you will come to another of my favorite places, **Jerome,** a former roaring copper-mining town whose buildings perch precariously on the side of Cleopatra Hill. Though called a "ghost town," it is a thriving artists' community with many galleries, shops, restaurants, and the Jerome State Historic Park Museum, which displays mining machinery and a 3-d model of the maze of mine shafts under the town. SNAG member Bill Seeley and sculptor Don Bassett have their studios in the Old Mingus High School. **Prescott,** another delightful western town in the highland pines, was formerly the capitol of the Arizona Territory and houses its pioneer artifacts in the Sharlot Hall Museum.

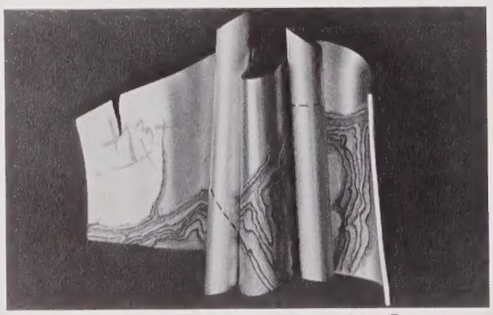
From Flagstaff, you also have the opportunity to visit the **Navajo** and **Hopi Country** in northeast Arizona. There you will find dramatic sculptured sandstone scenery, as in the indescribable landscape of Monument Valley, and archeological evidence of ancient civilizations in the ruins of **Canyon de Chelly** and Betatakin Ruin and Keet Seel Ruin at the **Navajo National Monument.** You also can experience the distinctive cultures of the present-day occupants of this unique land. Surrounded completely by the Navajo Reservation, the traditional homeland of the Hopi is a series of mesas—First, Second and Third—that comprise part of the great Black Mesa. The Hopi welcome visitors to their villages but have certain rules concerning conduct. They do not allow picture taking, sketching or tape recording. Liquor is prohibited and they desire respect for their privacy. Certain villages are off-limits. Non-Indians are welcomed to some of the ceremonial dances. Information on such events can be obtained at the Hopi Cultural Center Restaurant and Motel at Second Mesa. Tel: (602) 734-2401. This complex also features a museum displaying Hopi historical artifacts, crafts and historic photographs. Just west of the Culture Center is the Hopi Arts and Crafts Silvercraft Cooperative, which carries an extensive collection of Hopi jewelry, pottery, baskets, weavings and kachinas. Adjacent to the showroom is a studio where Hopi silversmiths work. Other places where you can see Hopi arts and crafts include Monogyar's Gallery off Highway 264 on Third Mesa just east of Old Oraibi; Hopicraft Craft Shop, east of Third Mesa's Old Oraibi on Highway 264; and Keams Canyon Arts and Crafts just west of town on Highway 264. For more detailed information I recommend *Journey to the High Southwest* by Robert L. Casey. (See references.)

Other points of interest in northeastern Arizona include the Painted Desert, Petrified Forest and Glen Canyon National Recreation Area.

Phoenix

If you visit me in Phoenix, the best time to come is November through April. The first place I would take you would be the Heard Museum. It has outstanding displays of Native American culture with an especially fine exhibit of jewelry of the Zuni, Hopi and Navajo. The museum shop has contemporary Indian jewelry, books, baskets, rugs, pottery and kachinas. Near the Heard, The Phoenix Art Museum has in its permanent collection excellent examples of 16th- to 18th-century Chinese cloissoné enamels. Next stop would be a visit to the metals studio at Arizona State University in Tempe to meet Dave Pimentel. You might enjoy seeing the University Mace and Presidential Chain Pimentel created, which is exhibited in Hayden Library. The University Art Collections are also worth seeing.

A trip to Marshall Way in Scottsdale takes you to a number of galleries and shops. The Hand and the Spirit features excellent contemporary crafts, including jewelry and metalwork. Next door are Ex Libris Art Books and the Mind's Eye, another interesting contemporary craft gallery. Elaine Horwich Gallery is across the street. Nearby on Fifth Avenue is Gra-Wun, where I would introduce you to Ray and Patty Graves, father-and-daughter jewelry designers. At the Scottsdale Mall you can see 17 outdoor sculptures, including ones by Louise Nevelson and Jacques Lipchitz. The Scottsdale Center for the Arts has changing exhibitions, sometimes of metalwork. Don't miss visiting Lovena Ohl at her gallery at the Scottsdale Mall. She is one of Arizona's most gracious ladies and her gallery features some of the finest Indian jewelry by such notables as Charles Loloma, Harvey Begay, Larry Golsh and others. Also nearby on Brown Avenue is Cavalliere Blacksmith Shop, where ornamental ironwork has been made since 1909.



Lynda Watson-Abbott, *Amid My Maps of the Canyon,* brooch, fine and sterling silver, markers, 2½ × 2"

Other places of interest are Paolo Solari's Cosanti Foundation on Doubletree Rd. and Taliesin West, Frank Lloyd Wright's architectural school and foundation off Shea Boulevard. A 20-mile trip north on Scottsdale Road past Pinnacle Peak to Carefree takes you to a desert community where homes are nestled between and (sometimes) across huge boulders.

Tucson

Tucson is a two-hour drive south from Phoenix on I-10. Picacho Peak is a favorite landmark en route. I know, I commuted to the University of Arizona in Tucson one semester. Mike Croft, President of SNAG, teaches metals at U.A. and always welcomes visiting metalsmiths. He might take you to Gentle Ben's for lunch or suggest going to the Cushing St. Bar and Restaurant and the America West Primitive and Modern Art Gallery on S. Meyer to see grills and railings by Tucson artist-blacksmith Tom Bredlow. You would also be welcome at Pima Community College. Jeweler/metalsmiths Betty and Joe Harris and Bruce Clark teach there and have often hosted metal workshops. "Old" Joe Harris is a native Arizonian and some say he was here before they discovered gold and silver in Arizona. He is one of our special state treasures.

If you come to Tucson in mid-February, the annual Tucson Gem and Mineral Show is worthwhile.

The Arizona-Sonora Desert Museum is a must in Tucson. It truly gives you an appreciation for life in the desert. Other places I like to visit are the Tucson Museum of Art with its museum shop that features contemporary arts and crafts, the Center for Creative Photography and the Berta Wright Galleries, especially the new one at the Foothills Mall. Side trips to Kitt Peak National Observatory, Mission San Xavier del Bac, Tumacacori National Monument and the artist community at Tubac are rewarding. As long as you are this far south, a trip to Nogales, Mexico is fun. Look for the guy who can cut out your name with a jeweler's saw on a brass ring blank in less than five minutes. Lunch or dinner at La Roca is good and you can find good-quality treasures of Mexico at El Changarro, next door to La Roca on Calle Elais.

If you can, plan a late February trip to Yuma, Arizona to attend Peter Jagoda's Symposium and Barbeque. At this time of year, metalsmiths from everywhere gather at Jagoda's studio and Arizona Western College to enjoy workshops, demonstrations, slide shows, a metal exhibition and Jagoda's famous barbequed ribs. (He will also be preparing them for the conference in Flagstaff.)

The amazing variety of Arizona's canyons, lakes, mountains, deserts, rivers, national parks and monuments, museums, galleries and especially the active metalsmithing community is here for you to discover. The metalsmiths of Arizona, including jewelers, metalsmiths, blacksmiths and knifemakers, look forward to sharing our hospitality with you.

Betsy Douglas is a designer/metalsmith and freelance writer living in Paradise Valley, Arizona.

MUSEUMS

FLAGSTAFF

Coconino Center for the Arts
U.S. 180/N. Fort Valley Rd.
Daily 9–5; (602) 779-5944
Multiuse facility offering a varied program of visual and performing arts, including "Form beyond Function," an exhibition of sculpture by SNAG members Aug. 11–Sept. 3, 1986

Lowell Observatory
1 mi. w. via Santa Fe Ave. on Mars Hill
A one-hour guided tour is conducted M–F at 1:30 PM. Lecture and slide programs are offered Fri. evening, June–Aug. Free program tickets should be obtained from the chamber of commerce at 101 W. Santa Fe Ave.; (602) 774-4505

Museum of Northern Arizona
3 mi. n. on U.S. 180/N. Fort Valley Rd.
Daily 9–5; (602) 774-5211
Contains exhibitions on the natural sciences, anthropology and art of northern Arizona, including Indian silver. The museum shop has fine-quality Native American metalwork. Will feature the 37th Annual Navajo Craftsman Exhibition Aug. 2–10, 1986

Pinoeers' Historical Museum
U.S. 180/N. Fort Valley Rd.
(602) 774-6272
Features exhibits of N. Arizona pioneers, including furniture, vintage tools, fire equipment and personal belongings

JEROME

Jerome State Historic Park Museum Off U.S. 89A
Daily 8–5:30; (602) 634-5381

PHOENIX

Arizona Historical Society Museum
1242 N. Central Ave.
Tu–Sat 10–4; (602) 255-4479

Arizona Mineral Museum
Arizona State Fairgrounds,
1826 McDowell Rd. at 19th Ave.
M–F 8–5, Sat 1–5; (602) 255-3791
Minerals and gems from around the world and displays of all phases of earth sciences

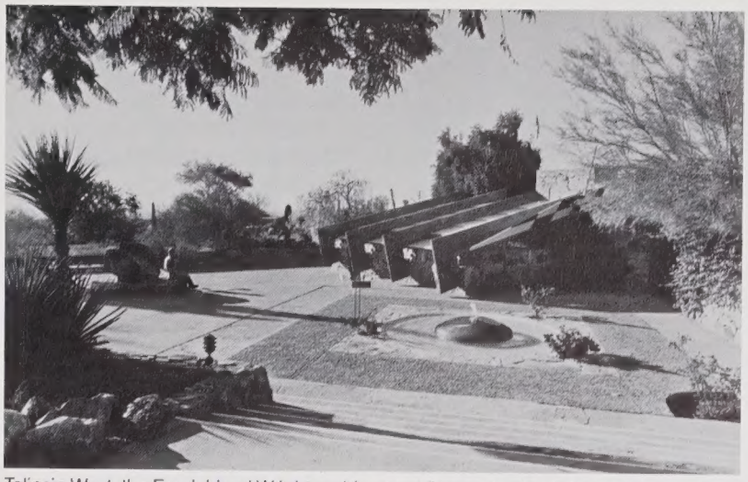
Arizona Museum
1002 W. Van Buren St.
W–Sun 11–4; (602) 253-2734
Exhibits include Indian artifacts, Hohokam culture and gun and mineral displays and early blacksmithing materials

Arizona Museum of Science and Technology
80 N. Second St.
M–Sat 9–5, Sun 1–5; (602) 256-9388

Arizona Museum for Youth
35 N. Robson, Mesa, AZ
Tu–F 12–5, Sat 10–5, Sun 1–5;
(602) 898-9046
Fine art center for children featuring folk art and contemporary works

Arizona State Capitol Museum
1700 W. Washington St.
M–F 8–5; (602) 255-4581
Displays of Arizona government history including the silver service from the USS *Arizona* and a 17′ zinc weathervane statue, "Winged Victory"

Galeria Mesa
155 N. Center St., Mesa
Tu–Th 12–8, F–Sat 12–5, closed Aug.;
(602) 834-2056
Changing exhibitions, some featuring metalwork



Taliesin West, the Frank Lloyd Wright architectural firm and school, Scottsdale. Photo courtesy: The Arizona Republic

Heard Museum
22 E. Monte Vista Rd.
M–Sat 10–4:45, Sun 1–4:45;
(602) 252-8848
Exhibits feature Southwestern archeological, ethnological and historic materials, including American Indian basketry, pottery, kachina dolls and an excellent collection of Zuni, Hopi and Navajo jewelry and metalwork. The museum shop has quality Indian arts and crafts

Mesa Museum
53 N. Macdonald St., Mesa
Tu–Sat 10–5, Sun 1–5; (602) 834-2230
Arizona pioneer-life exhibits, displays on ancient Hohokam Indians and gold legends of the Superstition Mountains

Phoenix Art Museum
1625 N. Central
Tu–Sat 10–5, Sun 1–5, W 10–9;
(602) 257-1222
Extensive collections of paintings, sculpture and art from the 15th to the 20th c., including 16th–18th c. Chinese colissoné enamels, 18th c. English silver, bronze sculptures by Archipenko, Roszak and others. Accessories of Costume (July 13–Oct 5, '86) will include some Victorian, art deco and art nouveau metal objects

Pioneer Arizona
N. of Phoenix via I-17, Pioneer Rd. exit
W–Sun 9–4; closed Sept., call for summer hours; (602) 993-0212
Outdoor living-history museum with crafts demonstrations, includes blacksmith shop

Plodtkin Judaica Museum
3310 N. 10th Ave.
Tu–Th 9–2, Sun 9–12;
(602) 264-4428
Closed for expansion June 4–Oct. 1, 1986
Collection of Jewish artifacts from the 16th c. to the present relating to Jewish life and holidays, including ceremonial silver

Pueblo Grande Museum
4619 E. Washington St.
M–Sat 9–4:45, Sun 1–4:45;
(602) 275-3452
Artifacts and ruins of the Hohokams

Scottsdale Center for the Arts
7383 Scottsdale Mall, Scottsdale
T–F 10–8, Sat 12–8, Sun 12–5,
closed Aug.–Sept., 1986;
(602) 994-2301
Outside the center, Scottsdale Mall includes 17 outdoor sculptures by Louise Nevelson, Jacques Lipchitz, Gary Slater, Michael Anderson and others

University Art Collections
Matthew Center, Arizona State University, Tempe
M–F 8–5, Sun 1–5; (602) 965-2874
Latin American, American and contemporary art

PRESCOTT

Sharlott Hall Museum
415 W. Gurley St.
Tu–Sat 9–5, Sun 1–5; (602) 445-3122

TUCSON

Amerind Foundation
64 mi. e. of Tucson off I-10
(exit 318), Dragoon, AZ 85609
by appointment only; (602) 586-3003
Free guided tours on weekends. A magnificent collection of archeological artifacts of the Southwest, including jewelry, pottery, musical instruments, baskets, hunting and cooking instruments and clothing

Arizona Heritage Center
949 E. 2nd St.
M–Sat 10–4, Sun 12–4; (602) 628-5774
Includes Arizona mining exhibit

Arcosanti Site, Paolo Solari, Cordes Junction, Mayer. Photo: Ivan Pintar

Arizona Sonora Desert Museum
Speedway to Kinney Rd.
Daily 8:30–sundown; (602) 883-1380
Features animals, plants and minerals indigenous to Arizona and the great Sonoran Desert

Arizona State Museum
Park Ave. and University Blvd.
U. of Arizona
M–Sat 9–5, Sun 2–5; (602) 621-6302

Center for Creative Photography
843 E. University, U. of Arizona
M–F 9–5, Sun 12–5; (602) 621-7968
Features changing photographic exhibitions and one of the finest print collections and photographic libraries in the country

Kitt Peak Museum
52 mi. s.w. off SR 86
Daily 10–4; (602) 325-9200
World's largest astronomical facility with visitor center

Mineral Museum
Geology Bldg. at N. Drive, U. of Arizona
M–F 8–4:30; (602) 621-6024
Exhibits include minerals, fine gemstones and fossils

Mission San Xavier del Bac
9 mi. s.w. of Tucson off I-19 on the Papago Indian Reservation
M–Sat 9:30–4:30; (602) 294-2624
Called "White Dove of the Desert," unique example of Spanish mission architecture built in 1783–97

Tucson Museum of Art
140 Main Ave.
Tu–Sat 10–5, Sun 1–5, summer hours differ;
(602) 624-2333
Exhibits feature Pre-Columbian, Colonial, 20th-c. Mexican, 20th-c. American and American Western Art, including Spanish and Colonial Mexican silver. Museum shop has contemporary metalwork by area craftsmen

University Museum of Art
Olive Rd. and Speedway, U. of Arizona
M–Sat 9–5, Sun 12–5; (602) 621-7567
Features special exhibitions as well as its permanent collection from the Middle Ages to the 20th c., including one of the largest collections of sketches and models by Jacques Lipchitz

GALLERIES

FLAGSTAFF/SEDONA

Anasazi Gallery of Art
2710 N. Steves, Flagstaff
M–Th 9–6, F–Sat 9–5; (602) 526-0718

Elaine Horwich Gallery
Schnebly Hill Rd. (Hwy 179), Sedona
M–Sat 9:30–5:30, Sun 12–5; (602) 282-6290
Contemporary painting, sculpture and some jewelry and metalwork

Sedona Arts Center
Hwy 89A at Art Barn Rd., Sedona
Tu–Sat 10:30–4:30, Sun 1:30–4:30;
(602) 282-3809

PHOENIX/SCOTTSDALE

Gallery 10
7045 Third Ave., Scottsdale
M–Sat 10–5:30; (602) 994-0405
Prehistoric, historic and contemporary works in baskets, ceramics, textiles, jewelry and artifacts by Native American artists

Gra-Wun
7122 Fifth Ave., Scottsdale
M–Sat 9:30–4:30; (602) 945-6464

Contemporary jewelry by Patty and Ray Graves,
Joe and Betty Harris and others

The Hand and the Spirit Crafts Gallery
4222 N. Marshall Way, Scottsdale
M–Sat 10:30–5, closed Aug 21–Sept 1; (602) 946-4529
High-quality contemporary crafts, including jewelry, sculpture and metalwork

Elaine Horwitch Gallery
4211 N. Marshall Way, Scottsdale
Tu–Sat 10–5:30 summer M–Sat 9:30–5:30 winter; (602) 945-0791
Features metal sculpture by Jeff Low, David Kraisler, Gary Slater, Randy McCabe and some small metalworks

House of Six Directions
7051 Fifth Ave., Scottsdale
M–Sat 9:30–5; (602) 946-1361
Prehistoric and contemporary Indian arts and crafts

Mind's Eye Crafts
4200 N. Marshall Way, Scottsdale
M–Sat 10–5; (602) 941-2494
Contemporary crafts, including jewelry and metalwork

Lovena Ohl Gallery
7373 Scottsdale Mall, Scottsdale
M–Sat 9:30–5; (602) 945-8212
Features jewelry by Charles Loloma, Harvey Begay, James Little, Larry Golsh, Charles Supplee and Al Nez

C.G. Rein Gallery
4235 N. Marshall Way, Scottsdale
M–Sat 9–5:30, Th 9–9, Oct–May; (602) 941-0900
Features metal sculpture and vessels by David Dirrim, Neil Hadlock, Frank Riggs and others

White Hogan
7144 1 Ave., Scottsdale
(602) 945-5556

Harry Wood Art Gallery
Art Bldg., Arizona State U., Tempe
M–F 8–5; (602) 965-3468
Changing shows and MFA exhibitions in metal, wood, fibers, clay and 2-d work

Yares Gallery
3625 Bishop Ln., Scottsdale
M–Sat. 10–5, closed Aug.; (602) 947-3251

TUCSON

African Arts, Ltd.
2905 E. Grant Rd.
M–F 10–5:30, Sat 10–5; (602) 795-1997
Traditional, handcrafted African masks, sculpture and crafts

Tom Bahti Indian Arts
450 W. Paseo Redondo
(602) 628-7029
Quality native art and grills by Tom Bredlow

Congress St. Galleries
including the DINNERWARE ARTISTS COOPERATIVE, 272 E. Congress St., (602) 792-4503; CENTRAL ARTS COLLECTIVE GALLERY; NETWORK GALLERY at the Hotel Congress

Gallery at the Tuscon Mall
4500 Oracle, Suite 727
(602) 293-5225

Obsidian Gallery
St. Philip's Plaza, Suite 90, 4340 N. Campbell, (602) 577-3598
Contemporary craft gallery, including jewelry, ceramics, woven clothing

Old Town Artisans
186 N. Meyer Ave.
M–Sat 10–5, Sun 12–5; (602) 623-6024
Arts and crafts by Tucson, Indian and Mexican artists, including jewelry, pottery, clothing, basketry

Berta Wright Gallery Shops
1736 E. Speedway, (602) 325-2591; and at the Foothills Mall, Ina at La Cholla, (602) 742-4134
Crafts, ceramics, fibers, jewelry and primitive and folk art

SCHOOLS

Arizona State University
School of Art, Room 130, Art Warehouse Bldg., Tempe; (602) 965-7526
Instructor: David Pimentel

Arizona Western College
Art Dept., Box 929, Yuma; (602) 726-1000
Instructor: Peter Jagoda

Glendale Community College
6000 W. Olive Ave., Glendale; 602) 934-2211

Grand Canyon College
3300 W. Camelback Rd., Phoenix; (602) 249-3300, ext. 402
Instructor: Colleen Scheck

Mesa Community College
1833 W. Southern Ave., Mesa; (602) 833-1261
Instructor: Ned Tuhey

Northern Arizona University
Art Dept., Flagstaff; (602) 523-2823
Instructor: Joe Cornett

Phoenix College
1202 W. Thomas Rd., Phoenix; (602) 264-2492
Instructor: Bill Jamieson

Pima Community College
2202 W. Anklam Rd., Tucson; (602) 884-6973
Instructor: Betty Harris

Scottsdale Community College
9000 E. Chaparral Rd., Scottsdale; (602) 941-0999
Instructor: Tipton Cummings

University of Arizona
Art Dept., Tucson; (602) 850-1181
Instructor: Michael Croft

SUPPLIERS AND SERVICES

This is a partial list of companies that have been used by Arizona metalsmiths and jewelers

TOOLS AND SUPPLIES

Bever Silver
525 S. Mill Ave., Suite 205, Tempe, AZ 85281; (602) 968-3462

Dorman's of Arizona
6900 E. Camelback Rd., Scottsdale, AZ 85260; (602) 949-0849

Four Wind Traders Inc.
118 W. Santa Fe Ave., Flagstaff, AZ 86001; (602) 774-1067

Hodson's of Scottsdale, Inc.
7116 1st Ave., Scottsdale, AZ 85251; (602) 945-2262

Langert Bros. Co.
1620 W. Camelback Rd., Phoenix, AZ 85015; (602) 264-1620

Lonnie's Inc.
7153 Apache Trail, Mesa, AZ 85208; (602) 832-2641

McGuire's Jewelry Supply Co.
123 E. 10 St., Tucson, AZ; (602) 622-7532

Mueller's Gem Gallery
7014 E. Camelback Rd., Scottsdale, AZ 85251; (602) 274-4724

Scottsdale Tool and Supply
15 N. 40th Pl., Phoenix, AZ 85034; (602) 273-7376

Shop of Art
26 E. University, Tempe, AZ 85281; (602) 967-3681

Starr Gems Inc.
220 W. Drachman, Tucson, AZ; (602) 882-8750

Swenson's Lapidary Equipment
6750 E. Main St., Mesa, AZ 85205; (602) 981-1384

Navajo Silversmith, c. 1900. Photo courtesy: Fred Harvey Collection, Heard Museum

FOUNDRIES

Arizona Bronze A Fine Art Foundry
1820 E. 3 St., Tempe, AZ 85281; (602) 968-4011

Bear Paw Bronze Works
2926 N. Civic Center Plaza, Scottsdale, AZ 85251; (602) 946-5858

Desert Crucible
3843 E. 38 St., Tucson, AZ; (602) 748-1620

GOLD AND SILVER REFINERS, SCRAP GOLD AND SILVER BUYERS

Bell Security, Inc.
816 E. Camelback Rd., Phoenix, AZ 85014; (602) 274-1121

E.D. Marshall Jewelers and Estate Brokers
2200 N. Scottsdale Rd., Scottsdale, AZ 85257; (602) 941-1920

Yellow Daisy Refining Co.
7077 Main St., Suite 3, Scottsdale, AZ 85251; (602) 946-7910

METAL SUPPLIERS: BRASS, COPPER, ALUMINUM, STEEL

T. A. Caid & Sons Inc.
2275 E. Ganley Rd., Tucson, AZ; (602) 294-3126

Capitol Metals
4131 E. Washington, Phoenix, AZ 85034; (602) 275-4131

Lusk Metals
2002 W. Campus Dr., Tempe, AZ 85282; (602) 438-1395

Reliance Steel and Aluminum
301 S. 26 St., Phoenix, AZ 85034; (602) 275-4471

REFRACTORY METAL SUPPLIERS

T. A. Caid & Sons, Inc.
2275 E. Ganley Rd., Tucson, AZ; (602) 294-3126

Reactive Metals Studio (Bill Seeley)
Old Mingus High School, Hwy 89A, Box 425, Jerome, AZ 86331; (602) 634-3434

Titanium Industries
912 S. Parklane, Suite 102, Tempe, AZ 85281; (602) 966-9700

STONE DEALERS: PRECIOUS AND SEMIPRECIOUS

Colorado Gems and Minerals
Jack Lowell; (602) 966-6626

Discount Agate House
3401 N. Dodge Blvd., Tucson, AZ; (602) 323-0781

49er Wholesale Minerals
Jim Vachek, 1903 N. 74 St., Scottsdale, AZ 85257; (602) 994-9024

Gem and Gold Creations
7121 Fifth Ave., Suite 16A, Scottsdale, AZ 85281; (602) 946-1696

Hudson's of Scottsdale Inc.
7116 1st Ave., Scottsdale, AZ 85251; (602) 945-2262

LDT Ltd. & Co.
5020 N. 18th Ave., Phoenix, AZ 85015; (602) 249-1852

Mueller's Gem Gallery
7014 E. Camelback, Scottsdale, AZ 85251; (602) 274-4724

Nature Arts Co.
Sherwin Berger, Box 26510, Phoenix, AZ 85020; (602) 994-4714

NAFCO Gems Ltd.
5020 N. 20 St., Phoenix, AZ 85016; (602) 248-9233. Wholesale

Quantum
Hubert Noethen, 7077 E. Main St., Scottsdale, AZ 85251; (602) 994-4600. Specializes in diamond setting

Gary W. Wright Co.
352 E. Camelback, Phoenix, AZ 85012; (602) 264-5300. Wholesale

SWAP MEETS

Park 'n Swap
3801 E. Washington, Phoenix, AZ; (602) 273-1258

Park 'n Swap
2601 S. 3 Ave., Tucson, AZ; (602) 623-4012

Tanque Verde Swap Meet
6617 E. Tanque Verde Rd., Tucson, AZ; (602) 885-2838. Tools, new & used; stones

WORTH VISITING

Taliesen West
108th St. n. of E. Shea Blvd., Scottsdale
Daily tours 9–10 A.M. June–Sept., daily every hr. 10–4 rest of year; (602) 948-6670
Architectural school and office of the Frank Lloyd Wright Foundation

Tlaquerpaque Village
Hwy. 179, Sedona
Over 35 galleries and shops in a beautiful Mexican-style setting

Tumacacori National Monument
45 mi. s. of Tucson
Daily 8–5; (602) 398-2341
Partially restored adobe mission built by Franciscans about 1800

James Turrell—Roden Crater Project
Skystone Foundation
P.O. Box 725, Flagstaff
(602) 774-5908

Tuzigoot National Monument
2 mi. e. of Clarkdale
Daily 8–5; (602) 634-5564
A remnant of a prehistoric pueblo built by Hohokam Indians between 1125 and 1400

Walnut Canyon National Monument
Off I-40 near Flagstaff
Daily 7–7 summer, 8–5 rest of year; (602) 526-3367

Wupatki National Monument
Off Hwy 89 n.e. of Flagstaff
Daily 7–7 summer, 8–5 rest of year; (602) 774-7000

HOPI INDIAN RESERVATION CRAFT INFORMATION

Monongya's Gallery
P.O. Box 82, Kykotsmovi, AZ 86039
(602) 734-2344 or 734-2384

Hopicrafts Craft Shop
Box 37, Oraibi, AZ 86039
(602) 734-2424

Hopi Arts and Crafts Silvercraft Cooperative Guild
Box 37, Second Mesa, AZ 86043
(602) 734-2463

Keams Canyon Arts and Crafts
Box 607, Keams Canyon, AZ 86034
(602) 738-2295

RESOURCE ORGANIZATIONS

Arizona Commission on the Arts
417 West Roosevelt St., Phoenix, AZ 85003,
Debora Whitehurst (602) 255-5882

Arizona Designer Craftsmen
Patty Graves, Central Chapter President
(602) 945-6464

Arizona Artist Blacksmith Association
B. J. Markkola, President, P.O. Box 1203, Bagdad, AZ 86321
(602) 633-2659

TOURISM RESOURCES

Arcosanti
2 mi. e. of I-17 at Cordes Junction, Mayer
Daily, 9–5; (602) 632-7135
An energy-efficient city of the future designed by architect Paolo Soleri

Canyon de Chelly National Monument
65 mi. n. of I-40 on Navajo Rt. 64 near Chinle
Daily 8–6 summer, 8–5 rest of year; (602) 674-5436
Four major prehistoric ruins in magnificent canyon settings

Cavalliere Blacksmith Shop
3805 N. Brown Ave., Scottsdale
(602) 945-6262
A historic blacksmith shop in continuous operation since 1909 producing ornamental ironwork

Cosanti Foundation
6433 Doubletree Rd., Scottsdale
Daily 9–5; (602) 948-6145
Headquarters and workshop of architect-craftsman Paolo Soleri, including displays of sculptures, windbells and a scale model of Arcosanti

Cushing Street Bar & Restaurant and America West Primitive and Modern Art Gallery
343–363 S. Meyer, Tucson; (602) 622-7984, (602) 623-4091
Features the iron grills and railings by Tucson artist-blacksmith Tom Bredlow

Fort Verde State Historic Park
2 mi. e. of I-17 at Camp Verde
Daily 8–5:30; (602) 567-3275

Glen Canyon National Recreation Area
at the Arizona-Utah border on U.S. 89, Box 1507, Page Visitors Center open daily 8:30–4; (602) 645-2471
Includes Lake Powell, Glen Canyon Dam

Meteor Crater
37 mi. e. of Flagstaff on I-40, 5 mi. s. to crater
Daily, times vary; (602) 774-8350

Monument Valley
between Kayenta and Mexican Water on U.S. 163
Daily 7:30–7 (weather permitting); (801) 727-3287
A spectacular land of isolated monoliths of red sandstone that tower above the desert floor

Montezuma Castle National Monument
5 mi. n. of Camp Verde
Daily 7–7 June–Sept, 8–5 rest of year; (602) 567-3322

Navajo National Monument SR
564 off 160 between Page and Kayenta
Daily 8–6 summer, 8–5 rest of year; (602) 672-2366 or 2367

Painted Desert
along AZ 87, 15 mi. n.e. of Winslow

Petrified Forest National Park
about 120 mi. e. of Flagstaff
Daily 6–7 summer, 7–6 spring and fall, 8–5 winter
World's largest collection of million-year-old petrified wood and Indian ruins, petroglyphs and views of the Painted Desert

Sunset Crater National Monument
off hwy 89 n.e. of Flagstaff
Daily 7–7 summer, 8–5 rest of year; (602) 526-0586

Arizona Office of Tourism
1480 E. Bethany Home Rd., Phoenix, AZ 85023
(602) 255-3618

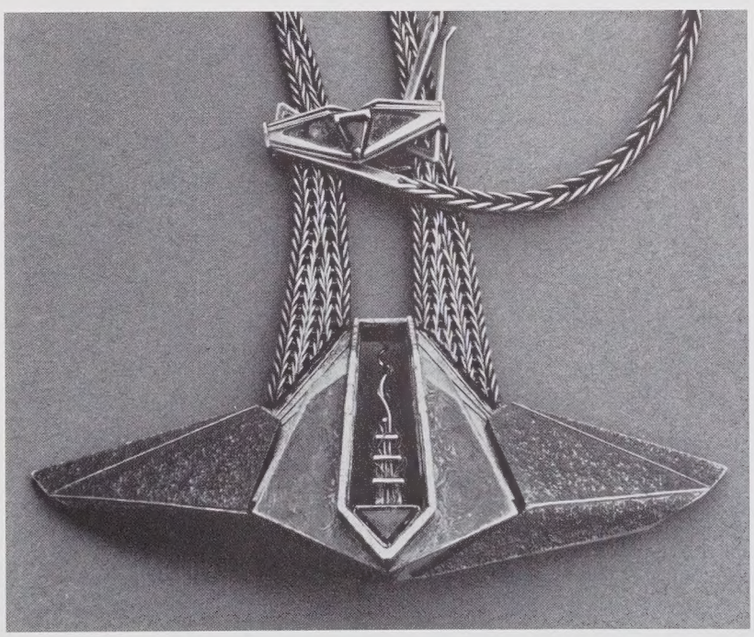
Flagstaff Chamber of Commerce
101 W. Santa Fe Ave., Flagstaff, AZ 86001
(602) 774-4505

Grand Canyon National Park Lodges
P.O. Box 699, Grand Canyon, AZ 86023
(602) 638-2401 or (800) 528-0483 out of state; (800) 221-5599 AZ toll-free

National Parks and Monuments
115 N. Second St., Phoenix, AZ 85004
(602) 261-4956

Nova-Hopi Tours, Inc.
Box 339, Flagstaff, AZ 86002
(602) 774-5003

Phoenix & Valley of the Sun Convention & Visitors Bureau
505 N. Second St., Suite 300, Phoenix, AZ 85004
(602) 254-6500



Top: Squash blossom necklace. **Above:** John Lee Hays, *Pendant*, 14k, 18k, 22k gold, sterling silver, tsavorite granite

REFERENCES

AAA North American Road Atlas—U.S., Canada & Mexico, Falls Church, VA: American Automobile Association, 1984

"Arizona Answer Book," *Arizona Republic,* Sunday, November 3, 1985

Arizona Highways, April 1980, June 1982, January 1983

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Arizona New Mexico TourBook. Falls Church, VA: American Automobile Association, 1984

The Guide to Phoenix, Anne Christensen, Linda Lambert, Diane Sikes. Phoenix: Valley Publishing Co., 1982

The Guide to Tucson, Anne Christensen, Diane Sikes Phoenix: Valley Publishing Co., 1981

Journey to the High Southwest, Robert L. Casey. Seattle: Pacific Search Press, 1985, $14.95

Metro Phoenix, January 1986, $1.95

Phoenix Home and Garden, January 1986, $2.00

Sunset Arizona Travel Guide, Menlo Park, CA: Lane Publishing Co., 1985, $8.95

This Is Tucson—Guidebook to the Old Pueblo, Peggy Lockard. Tucson: Pepper Publishing, 1983

Travel Arizona, Joseph Stocker. Phoenix: Arizona Highways, 1985, $8.95

Maintaining the Hand of the Artist in Production: Electrical Discharge Machining (EDM)

A technical paper on diemaking using graphite positives

by P.H. Baldwin

Dies have been used for thousands of years to produce jewelry as well as many kinds of decorative and utilitarian objects. Die striking as a process for producing multiple forms has several advantages. No detail is lost in repetition. Each die-struck piece is an exact positive of the die. Die striking uses metal in wrought form. Wrought metal is more homogeneous than cast metal and is frequently stronger. Some metals such as gold-filled and mokumegane are available only in wrought form. Metal of almost any thickness may be used in the process. Die-struck jewelry may be very lightweight. Another advantage of the process is that it is fast. One worker with typical 1940s tooling can produce 600 units per day, ready for finishing, affording lower cost per unit.

The die-striking process has several design limitations. There can be no undercutting in the relief. It is best to allow at least a five-degree draft on all vertical cuts. The piece must be designed within the limitations of the equipment. A bracelet that requires a forming pressure of 100 tons cannot be made in a 20-ton press. The piece must be designed so that the sheet or wire can flow into the die without folding or tearing. These limitations are fairly minimal. Forms such as school rings were commonly die struck before modern centrifugal casting came into use.

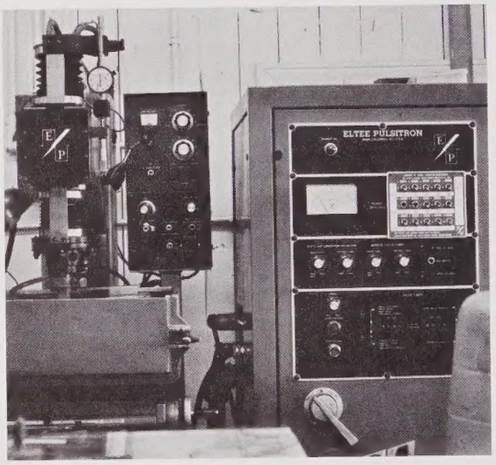
The principal limitation to die striking is economic. Dies are expensive due to the time and highly skilled labor needed to produce them. The cost of impression dies starts at $250 each in the United States, not including auxiliary tooling such as blanking tools. Before investing in a set of dies, you should calculate anticipated demand for the work. Editions of 500 units typically begin to make die striking economical. Production runs of 50 units or more are also required.

Methods of Die Making

Two traditional methods have been used to make dies. The first is to carve a steel positive, called a hob, and drive the hob into a block of annealed steel. This forms a perfect negative of the hob. The die block is then hardened. This method produces excellent results, especially from the standpoint of surface finish. However, driven hob dies present several difficulties. The skill required to carve and drive a hob takes years to learn and the process is very slow and expensive. Designs with large, flat surfaces require a great amount of force to drive the hob into the die block, necessitating the use of a large press.

The second method is to cut the design (in reverse) directly into the die block. Frequently the design is in the form of a master pattern that is reduced and cut into the die block with a pantograph. This method can also achieve excellent results but is subject to several limitations. The pantograph can cut to only one depth per pass. This makes it very difficult to cut designs with organic relief. The translation of the pattern to the die has a mechanical quality, the hand of the designer cannot be shown. Some graphic elements such as modulated lines are difficult to do and never look right. In addition, the pantograph cuts rather slowly. The steel is removed in layers of about .002" per pass. The surface finish left by the cutting tool of the pantograph tends to be somewhat rough. If a polished die surface is required, the polishing must be done after the die is cut.

A third method of die preparation called Electrical Discharge Machining (EDM) has evolved. EDM has been used in the toolmaking industry since the late 1940s. The main application for the process is to make cutting dies for stamping sheet metal shapes. These cutting dies have found application in both high- and low-volume jewelry production. EDM is also used to make multiple shapes from sheet metal or plate (wire EDM). This technique has also found some application in jewelry production. Recently, a process has been developed that uses a graphite positive to make impression dies for the jewelry industry.



ELTEE Pulsitron EDM machine

1

Theory of EDM

The EDM machine removes metal by an electrical spark that leaves a crater or negative where it strikes the work. By controlling the frequency of the spark (spark gap) and the amount of time the spark is discharging (on/off time), metal may be removed (machined) in a highly controlled manner. The spark jumps from a positive, called an electrode, to the work (die block), and the impression left in the die block is an almost exact negative of the electrode.

The material that is used for the electrode has an important effect on the clarity of the impression in the die block. The electrode is consumed in the process of "burning," however, different materials "wear" at different rates. Various factors influence electrode wear, including the settings of the EDM controls (Figure 1). The machine settings being constant, electrode materials that are chemically active and poor conductors of electricity will tend to wear faster than electrode materials that are good conductors of electricity and chemically inert. For example, steel electrodes would wear quickly and fine gold electrodes would not wear quickly.

A factor in electrode material selection is ease of shaping the material to the desired form. A material that happens to be an excellent conductor of electricity, relatively inert and easy to shape is *graphite*. Special high-density, copper-impregnated graphite is made for use in the EDM machine. The use of graphite electrodes for making impression dies presents unique opportunities. Graphite is soft and easily carved and sanded. It may be polished to a mirror finish or textured. Graphite positives allow the designer or artist to translate ideas directly into die form.

There are several limitations to designing for graphite-burned dies. Fine surface detail is blurred in cuts deeper than .025". This problem may be dealt with by using a hogging electrode for cutting the die to the required depth and then cutting the fine detail with a second electrode for a finishing cut. A second limitation to design is that fact that the EDM leaves a lightly textured surface, similar to that left by glass bead blasting. This texture may be removed in the dies by polishing with stones after the EDM cutting, or it may be used as an integral part of the design.

The application of copper-impregnated graphite for the preparation of jewelry dies has been developed at West Earth, Inc. of Seattle, Washington. West Earth is a manufacturer of Northwest Coast Native American design jewelry. Northwest Coast Native American design is mainly a carving art. The "hand" of the artist is very important to the overall effect of the piece.

Traditional carvings tend to be in softer materials such as wood or argulite. The limitations of either hobbed dies or cut dies made the faithful reproduction of Native American designs difficult. The process of making dies with an easily carved material such as the graphite was an answer to these difficulties. Rick Muller and I developed the process in 1985.

Procedure for Making a Die Using the EDM

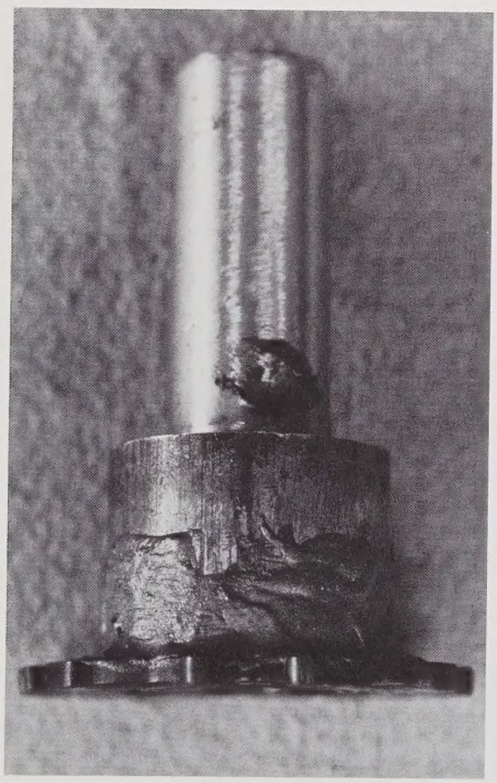
The following is a step-by-step sequence used to produce a die from a carved graphite electrode:

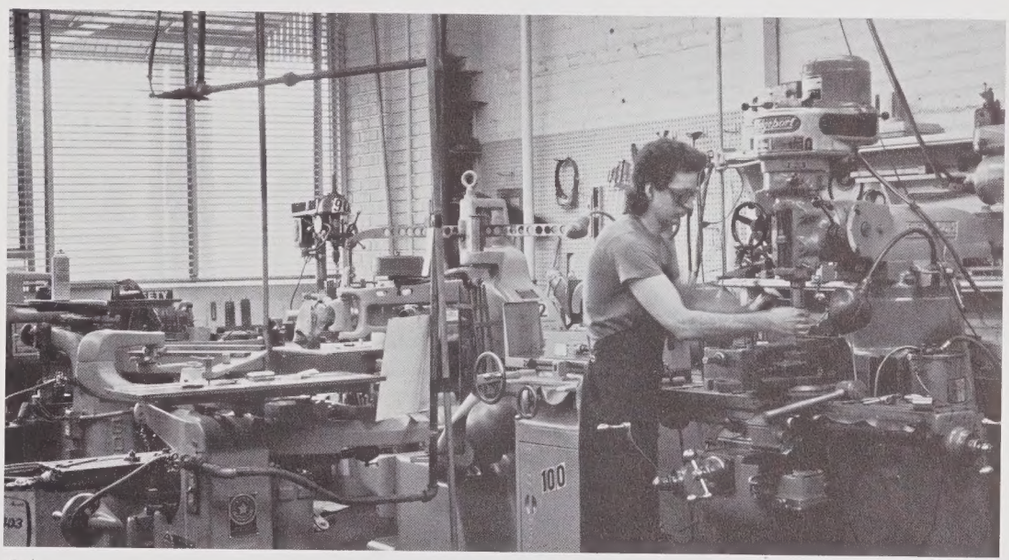
1. The graphite electrode is carved by the designer (**Figure 2**). The electrode pictured was designed and carved by Howard Jackson. The electrode is approximately 2" across and is in the form of a Sisiutl or Sea Monster.

2. The electrode is glued to the electrode holder and copper paint is applied to the back to conduct electricity from the holder to the electrode (**Figures 2, 3**). Note the hole in the electrode holder. This is to supply a stream of pressurized electrolyte to wash away the particles of oxidized metal from the surface of the die during cutting. Injection flushing as pictured is preferable to spray flushing. Proper flushing of the die surface is very important to achieving a clean impression. Poor flushing results in a carbon buildup between the electrode and the die block. The need for flushing should be taken into account when designing.

3. A die block is prepared for burning the impression. A block of 01 tool steel is milled with an overhead mill and a shaper (**Figures 4,5**) to roughly flatten the surfaces and cut the dovetails used to hold the die in the striking hammer. The die block is then hardened and tempered. The EDM can cut hard or soft steel equally well. This operation is done before burning the impression to avoid possible loss of the die by error in heat-treatment.

2▲ 3▼





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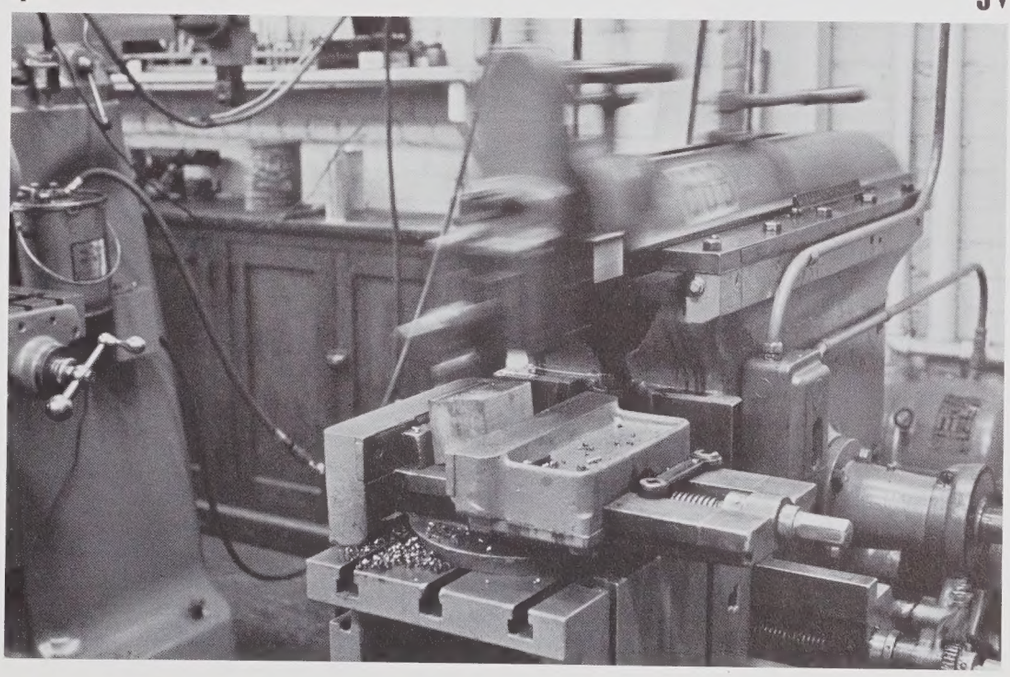
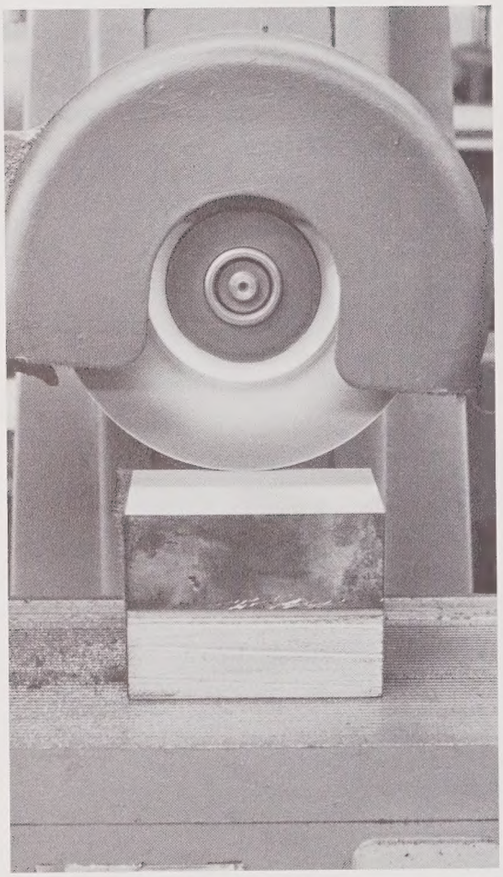




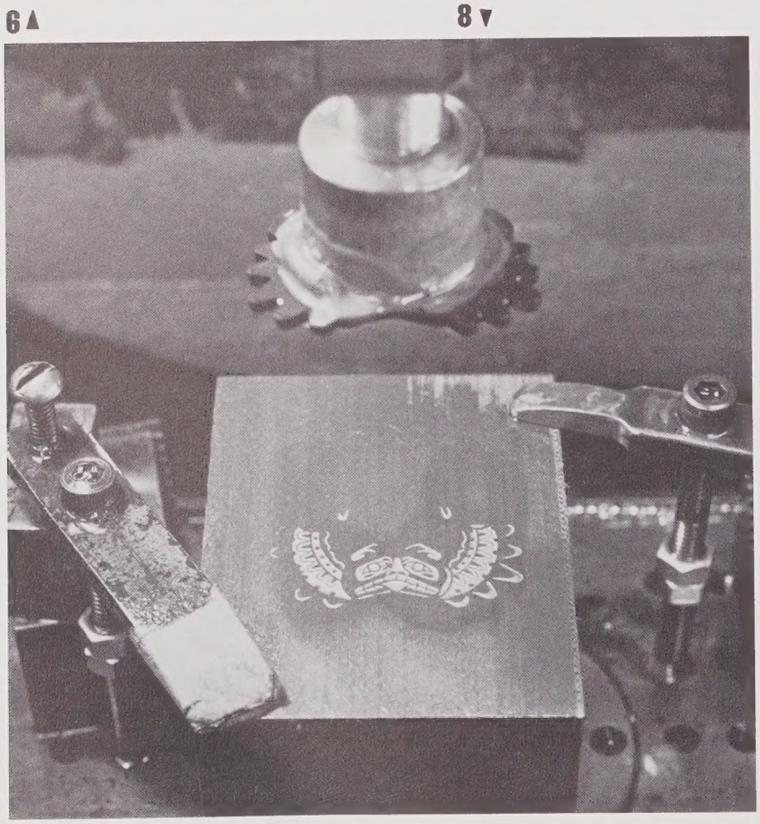
6▲

4. After heat treating, the surface of the die block is ground to an accurate finish with a surface grinder (**Figure 6**). The die block is now ready to have the impression cut using the graphite electrode and the EDM.

5. The electrode and holder are clamped into the servo and the die block is positioned in the tank. During cutting, the tank is filled with an electrolyte that covers the die block and electrode. The proper adjustments are made to the controls of the EDM machine. These include amperage, on/off time, type of cut and flushing pressure. Experience is the main guide to setting the controls. The tank is filled with the electrolyte and cutting begins (**Figure 7**).

6. As the cutting progresses, the surface of the die is examined to ensure the operation is proceeding satisfactorily (**Figure 8**). During inspection the die block is lightly wire brushed to clean the surface of accumulated oxides and carbon. **Figures 8 and 9** show the progression of the cutting operation. Control settings on the EDM are changed during the cutting operation. At first, the machine is set on fairly high amperage with a rough cut to cut the die cavity quickly with a minimum of electrode wear. After the desired depth is reached, the machine controls are set at lower amperages and finer cuts. The final cut is done with a special fine finish setting on the machine. The final finish is especially wearing on the electrode.

7▲



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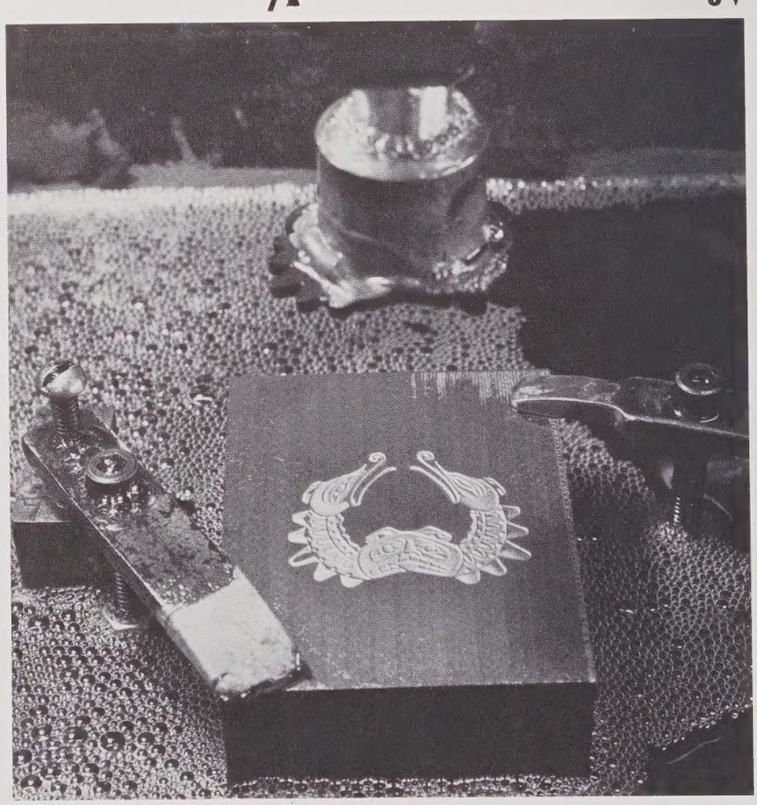

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7. After the desired depth of cut and quality of surface is achieved, the tank is drained and the die block is removed. The die cavity is often polished with a soft wire brush, abrasive grit and kerosene. If a dead smooth surface is desired, the die cavity is finished with stones.

Figure 10 shows the finished die block. Note the surface detail in the die and the accompanying test stamping in bronze in **Figure 11**. The lightly pebbled EDM surface will be polished by tumbling the stamping in plastic and steel media.

8. After the die has been approved, blanking tools are made for production striking. The blanking tools are made using a bronze stamping and the EDM.

Conclusion

The technique of making jewelry by die striking is an answer to a problem many artists/metalsmiths are facing. The demand for our work is exceeding the ability of hand techniques to supply sufficient production.

The difficulty is that every production technique exacts a price in terms of design. That price is often one of forcing the metalsmith to abandon the thing that makes the work attractive, the "hand" of the artist or craftsman. Carved graphite EDM dies allow for the possibility of both high production and direct control by the designer on the finished form of the work. This is indeed a breakthrough in the effort to humanize the products of technology.

Sources

Graphite and other electrode materials:
EDM Supplies Inc.
9806 Everest St., Downey, CA 90242
(714) 521-9681

EDM Machines: EDM machines are very expensive. The one pictured would cost between $30,000 and $60,000, depending on condition and age. One of the several manufacturers in the world is:
Eltee Pulsitron
26 Fairfield Pl., West Caldwell, NJ 07006
(201) 575-8816

If you wish to find a shop to burn your dies you can write or call **West Earth, Inc**., 406 Dexter Ave. N., Seattle, WA 98109; (206) 624-0013, or you can find a die shop locally.

The *Yellow Pages* has a listing for tool and die work, or look for manufacturing jewelers that have a stamping setup. Frequently, local machinery dealers know who has an EDM machine and can often tell you who does good work.

Be sure that the die shop you do choose to do the work has heat-treating facilities to properly harden the die and help you with steel selection. W1, O1, A2, D2, S2 all make good dies. The selection of the steel to be used is dependent on the form of the piece, the number of units to be struck and the tools used for the striking. Ideally, one could have the opportunity to work in the field for a period of time. However, if you can find a shop that has a sympathetic ear, use it.

P.H. Baldwin is a practicing metalsmith, living in Seattle, WA. This paper covers an aspect of the metals field he learned about recently from working in industry.

10 ▲

11 ▼

Reviews

David Watkins
Crafts Council Gallery, London
November 20–January 12, 1986
by Deborah Norton

This David Watkins retrospective served to reconfirm his international stature as one of the major forces in metalsmithing today. From his early machined neckpieces to his recent foray into sculpture, this artist's clear and well-conceived vision of the relationship between form and space has followed a definite sequence of progression without haphazard or muddled tangents.

Watkins's acrylic and gold or silver neckpieces from the early 70s are large-scale explorations of geometric and linear forms. With hinges he combined various machined elements, often columnar forms or chevrons, in such a way as to make them conform to the body's contours. He relied on soft, transparent colors to give the industrial plastic the richness and warmth it lacked, at the same time humanizing the scale and severity of the form. These early pieces, highly innovative at the time they were created, have today a studied intellectuality, as though in exploring uncharted territory Watkins dared not trust his instincts.

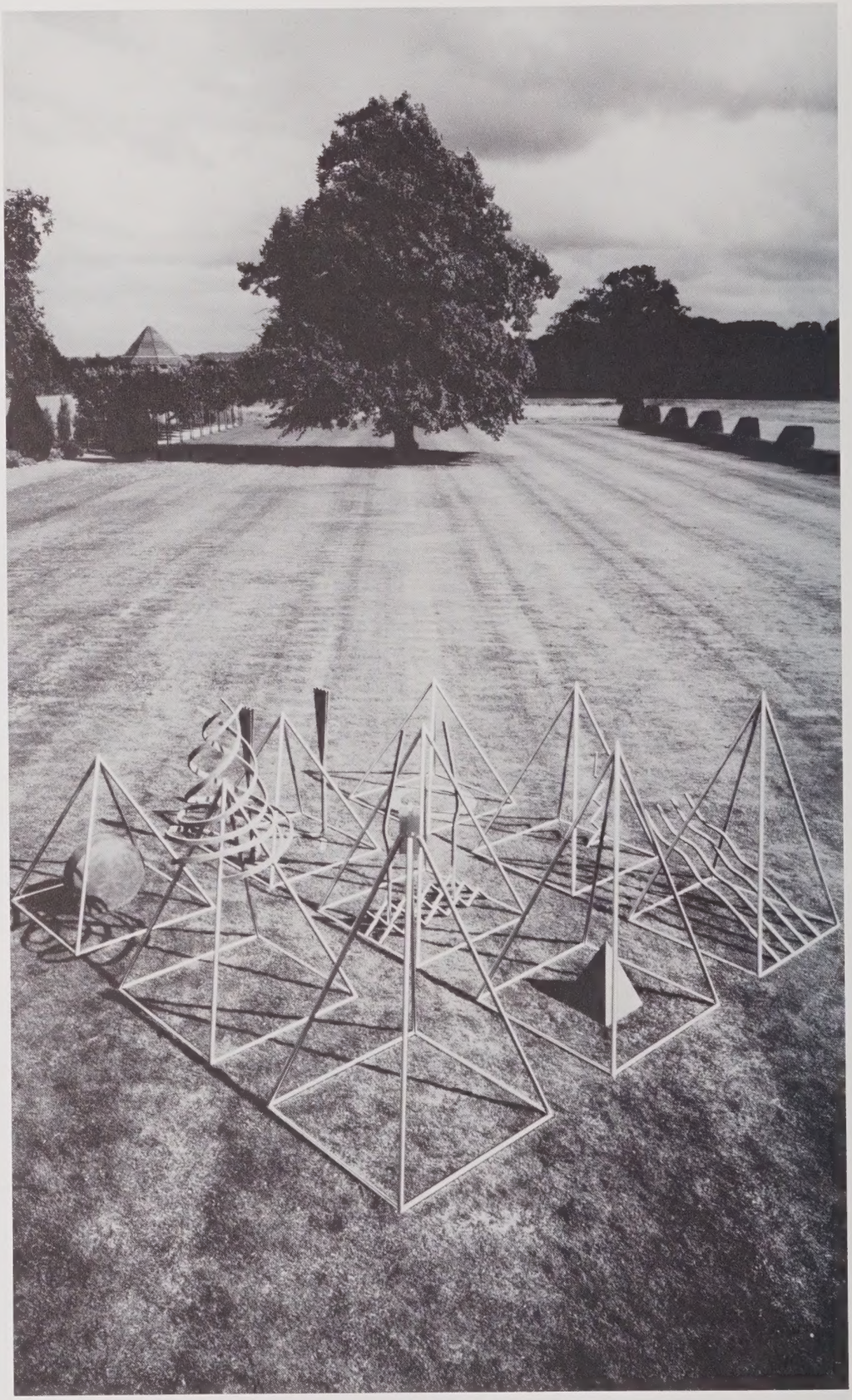
As his confidence and expertise grew, Watkins abandoned color, realizing that its mitigating qualities were no longer necessary. By the late 70s, he eschewed the thick bars of plastic for thin steel rods, reformulating several of his earlier ideas in this new material. Although relatively large-scale, the delicate lines in steel and gold resulted in visually lighter, more elegant pieces. During this time, he also began to explore alternative ways a neckpiece might relate to the body. His 1977 *Four Way Ceremonial Neckpiece* made use of the empty space around the shoulder and neck.

Following a 1978 teaching stint in Australia, Watkins began to make his neckpieces smaller in scale and less formal in conception. He returned to color, but this time bright, primary colors. For the first time, he made a series of pieces without resorting to lengthy preparatory drawings. His *Landline Number 9*, 1981, is an extremely simple neckpiece—a single red line encircling the neck by means of several obtuse angles. He then enlarged upon this concept by stacking several of these neckpieces, often with geometrical forms protruding from the basic collar. Today, he is still creating these modern-day Elizabethan collars in various materials including paper, gold leaf and wood, as well as neoprene-coated steel. He has experimented with filling in the space between the linear forms to create planar surfaces, as well as expanding his palette to include more somber shades, proving he is as successful at dealing with color as he is with form and space.

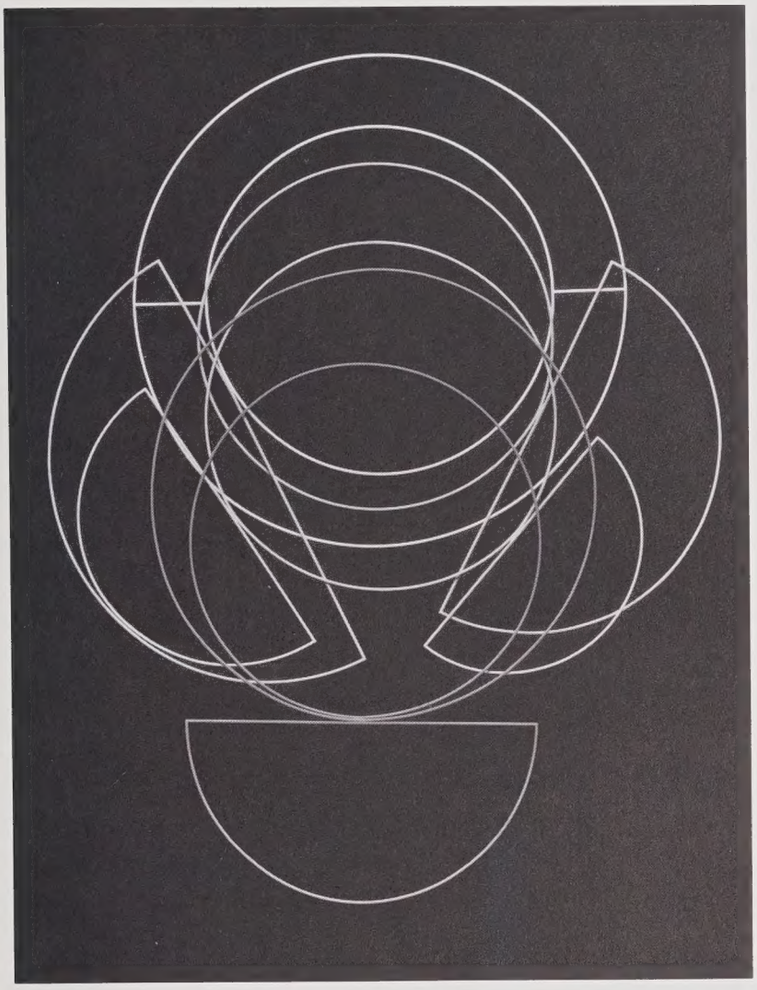
Watkins has recently turned his attention to sculpture, the field of his original training. Of the two major sculptures on display, the more successful was his five-meter-high *Column*, 1984, a series of distorted stainless steel squares, suspended horizontally from the ceiling in a stacked fashion. Perhaps because he has already explored similar forms in his jewelry, he was able to translate this idea into sculpture with ease and confidence.

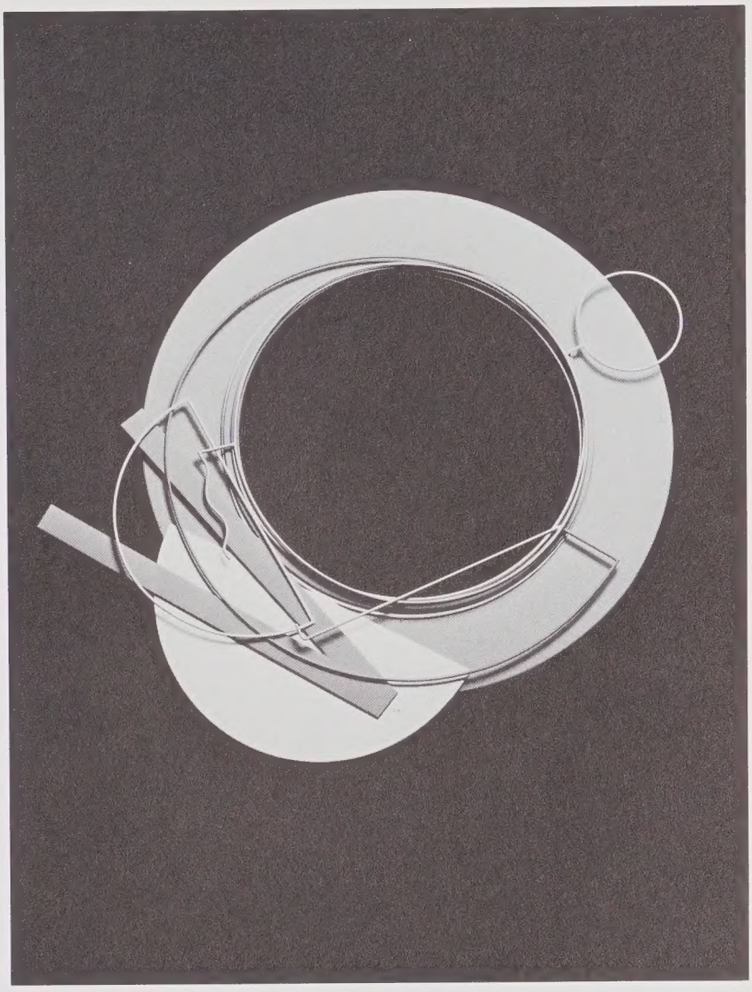
His large piece *Kingdom—Day for Night*, 1985, consisted of nine pyramids outlined in stainless steel, each containing a different design element, either geometric or curvilinear. Averaging about two meters high, they were lined up so that their bases created a square measuring six meters on each side with equal spacing between the forms. Like his early jewelry, this sculpture appeared intellectually ponderous without the vitality and subtlety of his later neckpieces. Unfortunately, the small room in which it was displayed did nothing to enhance it. Not only was it difficult to see the nine pyramids as one unit but the relationships and contrasts seemed too obvious, leaving this viewer grasping in vain for a more profound observation. However, it must be said that a beautiful photograph of this same piece displayed on a wide expanse of lawn hinted that, given the appropriate setting, this sculpture may actually be more accomplished than it appeared in the gallery.

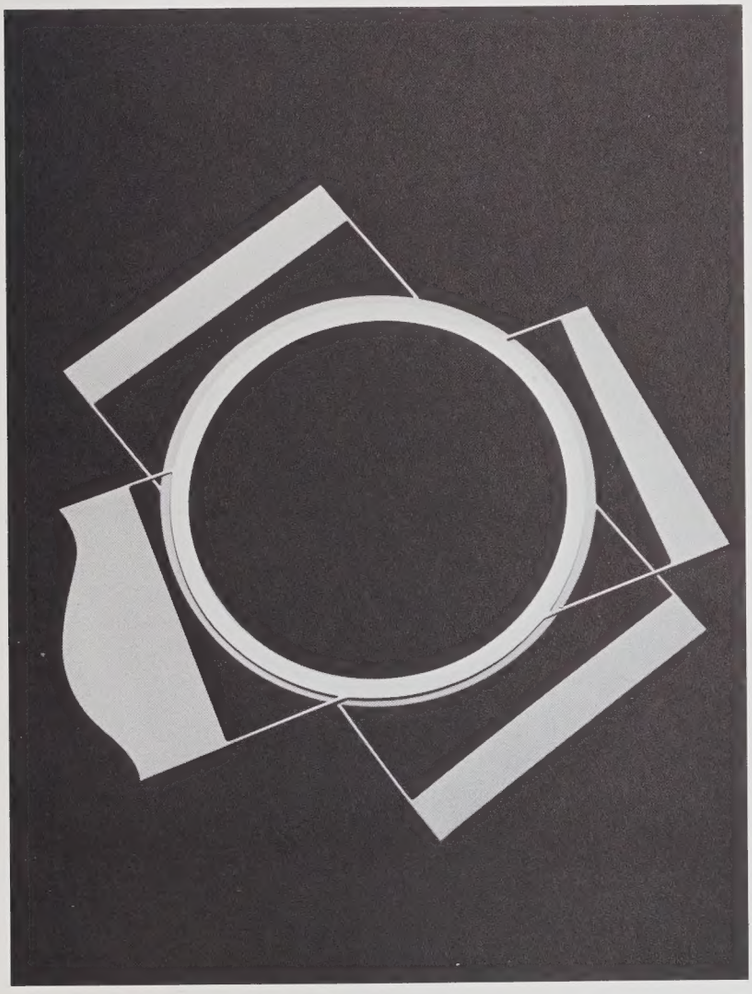
This exhibit will be traveling to the City Art Gallery in Leeds, England, and the Stedelijk Museum in Amsterdam. There is an excellent 62 page color catalog of the show available for £4.95 plus £2. for postage and handling from: Publications, Crafts Council, 12 Waterloo Place, London, SW1Y 4AU, England.

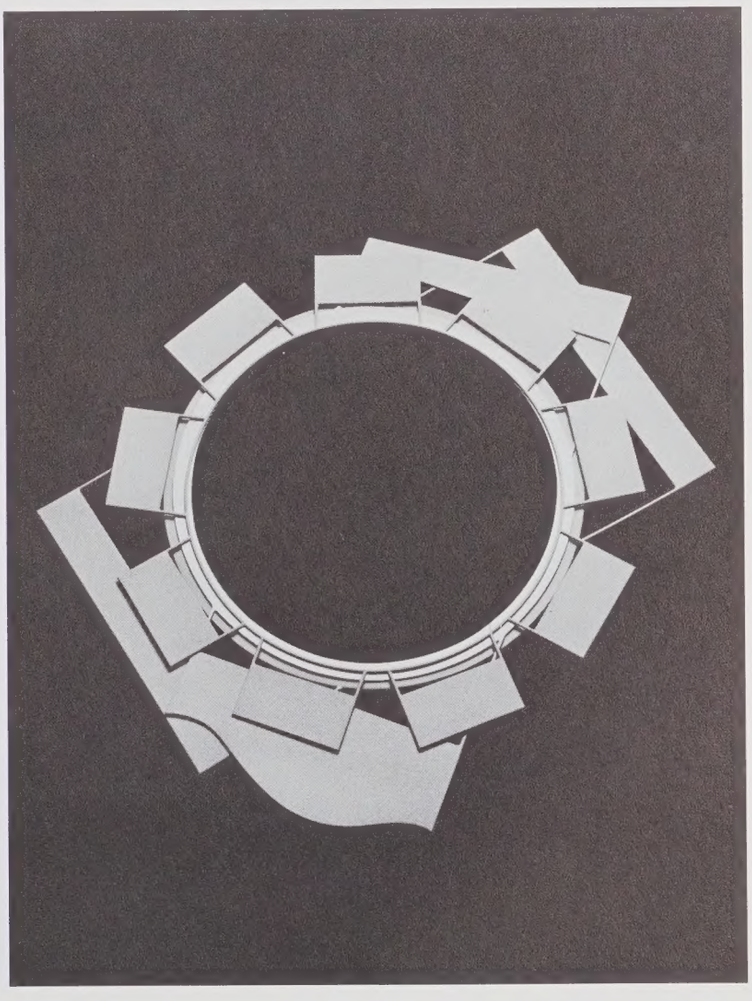


Above: *Kingdom*, steel sculpture in grounds of Sutton Place, 1985. Photo: Bob Cramp.
Opposite: *Top left: Primary Orbits* neckpiece, neoprene over steel, 1983. Photo: Tim Hill;
top right: *Neckpiece*, neoprene over wood, 1984;
bottom left: *Neckpiece*, neoprene over wood 1984;
bottom right: *Neckpiece*, neoprene over wood, 1984









Michael Tom
Sarratt Gallery, Vanderbilt University,
Nashville, TN
January 4–January 26, 1986
by Klaus Kallenberger

The 13 pieces on exhibit here were mainly vessel forms. Sharply angular, quasi-architectonic components were mounted on, or structured into the openings of, these simple rotation forms. Broken edges, sharp lines, rising and falling ramps all angled into each other, leaving a squared or multiangled opening. In two vessels, an insert floated in the void to close the vessel without a lid—a nice effect. A large 18″ diameter platter had elements not unlike those of potter Peter Voulkos. In fact, much of Tom's work reflected the vocabulary of pottery.

The show presented a united approach, the imprint of one craftman's vision. The work as a body held together. One piece had the immediate feeling that this might be a display of archeological findings, works from another time or alien culture. The dark patinas lent an atmosphere of mystery to these vessels, which could well have been used in some forgotten ritual or ceremony. An interesting tension existed between the sensuousness of the rounded vessel forms and the constructed additions. Spikes, broken edges and crisply metallic elements spoke of hostility, anger and masculinity. The plump, ovoid containers were obviously fecund female images, an intriguing combination. Those objects employing asymmetrical constructions with the rounded container forms held up much better than those employing strict symmetry.

Overall, the show was strong and competent. Michael Tom should be encouraged to further investigate, experiment and refine his vision. There is strength and sensitivity here as well as boldness and heart.

The New Jewelry:
Sculpture of a Wearable Scale
Smith Goodrich Gallery, Providence, RI
November 26–December 21, 1986
by Harriet E. Brisson

To conceive of wearable sculpture is an ambitious undertaking. Pat Flynn, David Freda and Curtis LaFollette were among the exhibitors here who are truly redefining jewelry in sculptural terms. *Pin* by Pat Flynn has a saw blade set in gold with an opal, a real Dada statement concerning the tradition of jewelry. His work is strong and transcends technique. His three *Bar Pins,* utilizing long, thin crystals wrapped in thin sterling and then in gold, show a real spark of genius.

Much the same is true of David Freda's work. He has taken molds of large exotic fish and cast them beautifully, realistically in silver, then painted them with bright colors. These fish pendants hang on several delicate silver wires, strengthened by a single strand of stainless-steel cable, to form a circle around the neck of the wearer. In two other pieces, he has put turtle lapel-pins in plastic bowls with green-plastic palm trees, which are really tacky, creating an environmental sculpture. *Jewelry in a Jar* is perhaps even more bizarre. The jar, with a rough screen held in place by wire wrapped around its neck, is a cage for a snake, coiled on a branch. Where is the jewelry? It is the sterling snake with neckpiece, of course.

Curtis LaFollette makes subtle fun of serious tradition when redefining jewelry in Dada terms. His set of birthstone rings has printed dictionary definitions, encased in plastic, rather than actual gems. His *Wedding Ring* set is a brutal statement about marriage. It has fishhooks which may be replaced with razor blades, depending on the wearer's mood. More subtle is his *Crucifix Choker,* a silver cross with a Wedgwood cameo of a woman suspended on a stainless-steel, choke collar.

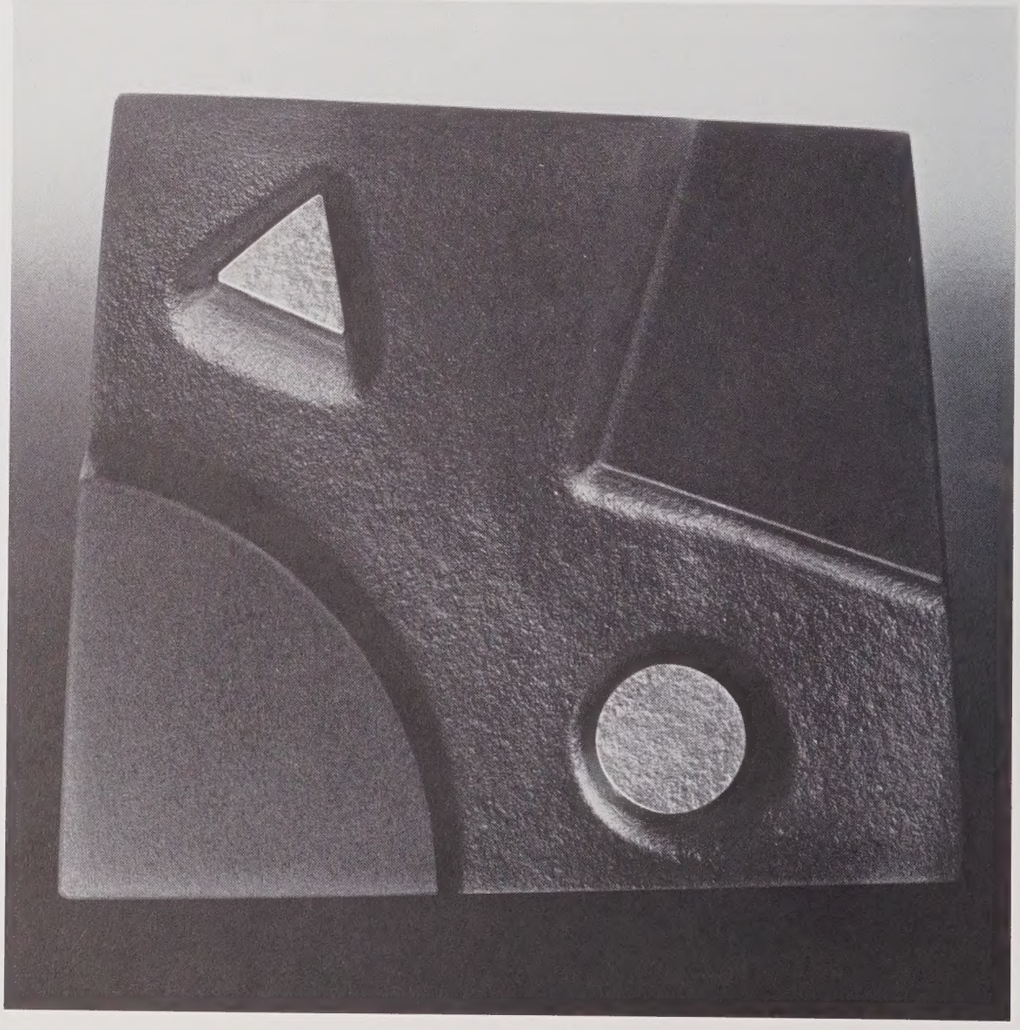
Pavel Opocensky's pins of ivory, ebony or lignum vitae are beautifully sculpted geometric forms. The most striking piece here was a bracelet carved from delicate pink ivory with a subtle crisscross texture in the shape of a Moebius strip. The forms of Rachelle Thiewes' pieces are also derived from geometry. She has placed gold cones or discs on silver supports to make bracelets and pins. The lone earring from the *Cone Series* was similar in concept but stood out from the rest in its presentation. Mounted on a piece of slate, it became a small wall sculpture when not being worn (if indeed it can be worn, as it is quite large).

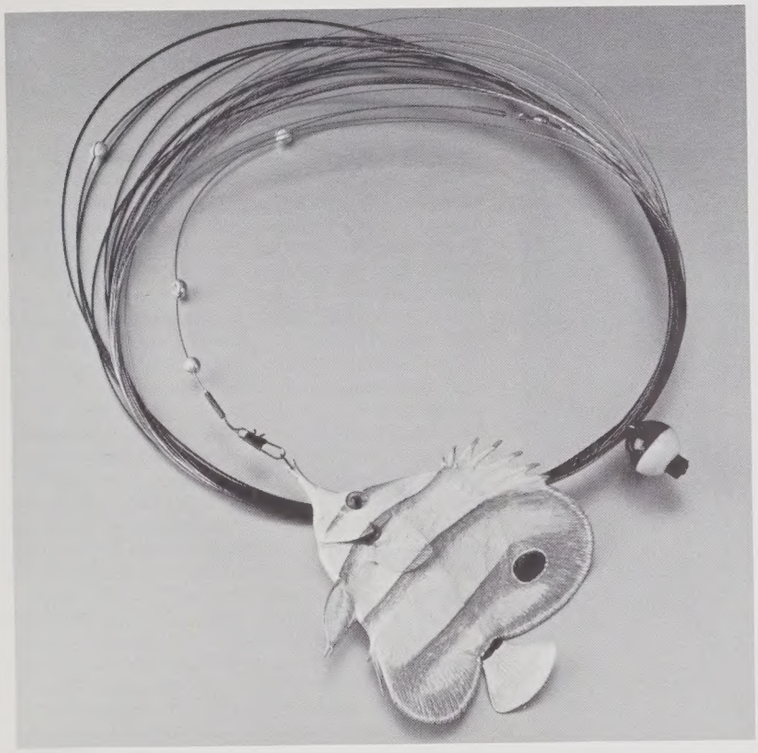
Color and geometric form were the focus for Donald Friedlich, who used titanium most effectively in this show. One of his pins was elegant with a purple titanium circle and a gold triangle on a textured matt-black background.

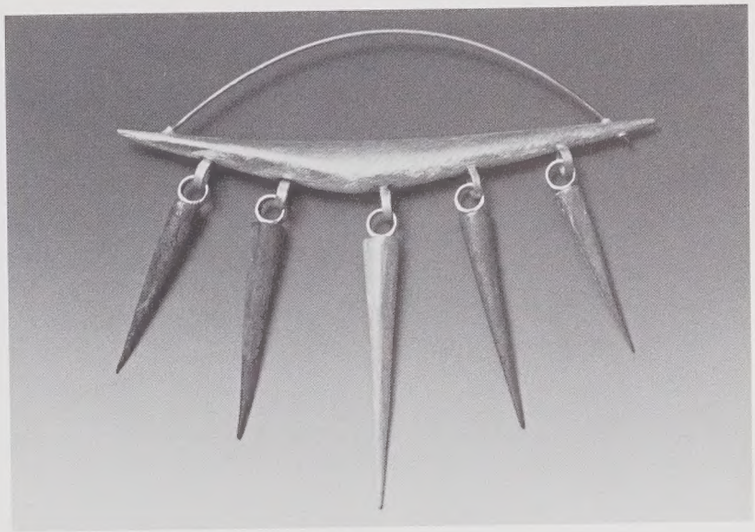
The *Pod Brooch* by Sandra Enterline, wrought out of sterling silver, copper and brass with patina, was an excellent example of varied color using traditional techniques and materials. Small in scale, it is strong in its simplicity and pure form. Last, but not least, Charles Lewton-Brain has created pins using the doublée process of scoring sterling silver and overlaying a thin layer of gold, producing random patterns when heated. Two pins made of gold doublée and sterling mounted on walrus ivory were among the most outstanding pieces in this show.

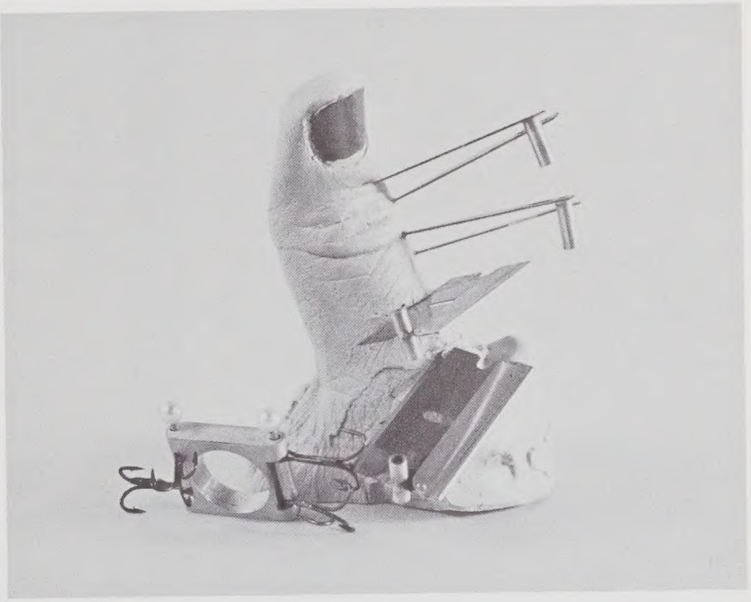
Out of the 22 artists in this show, eight lived up to its title: "New Jewelry: Sculpture of a Wearable Scale."

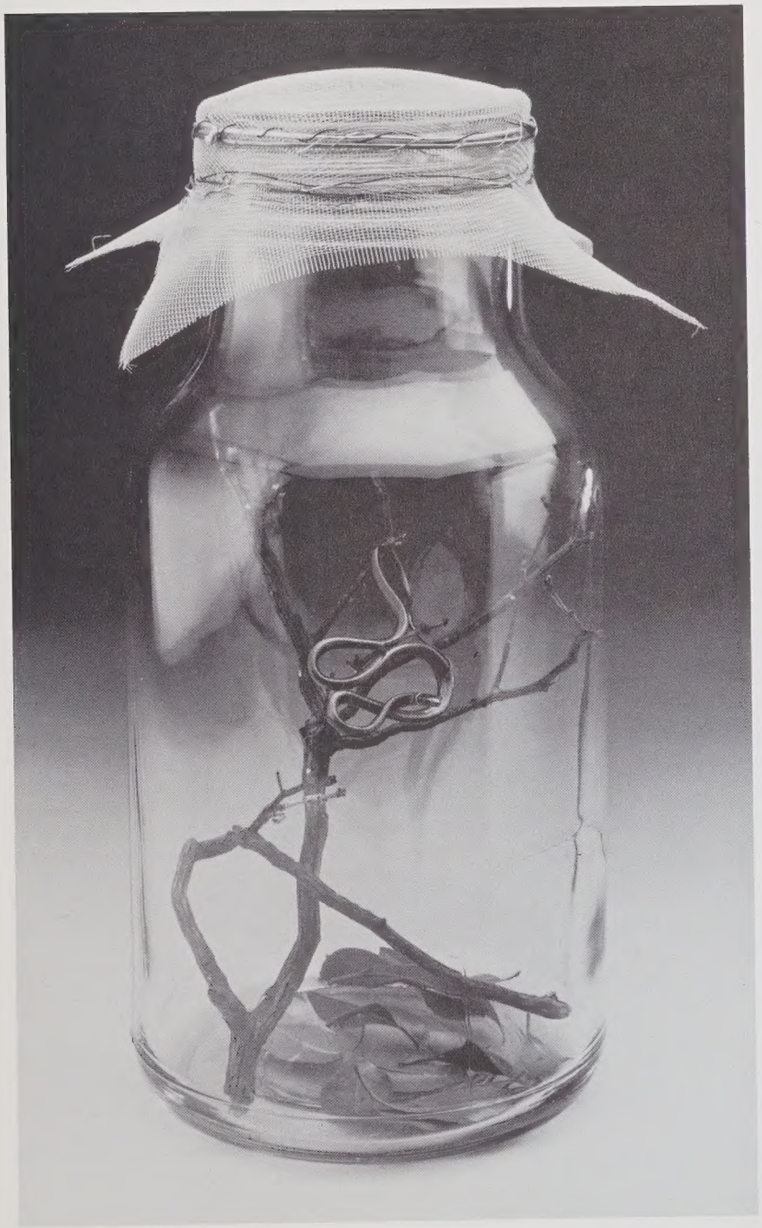
Below left: Michael Tom, *5 Sisters: The Collector*, copper, 15 × 6″ d. **Below:** Donald Friedlich, *Pin*. **Opposite page, clockwise from top left**: David Freda, *Copper Banded Butterfly Neckpiece*, sterling silver, stainless steel, 7½ × 5½″. Photo: Ed Freeman/Whitelight; Sandra Enterline, *Pod Brooch w 5 Hanging Cones and Varied Patinas*, brass, copper, sterling silver, 18k gold, 3½ × 2¼″; Curtis LaFollette, *Wedding Ring*; Pavel Opocensky, *Ivory Bracelet*, 5″ d.; David Freda, *Jewelry in a Jar*, 16 × 7 × 7″. Photo: Ed Freeman/Whitelight

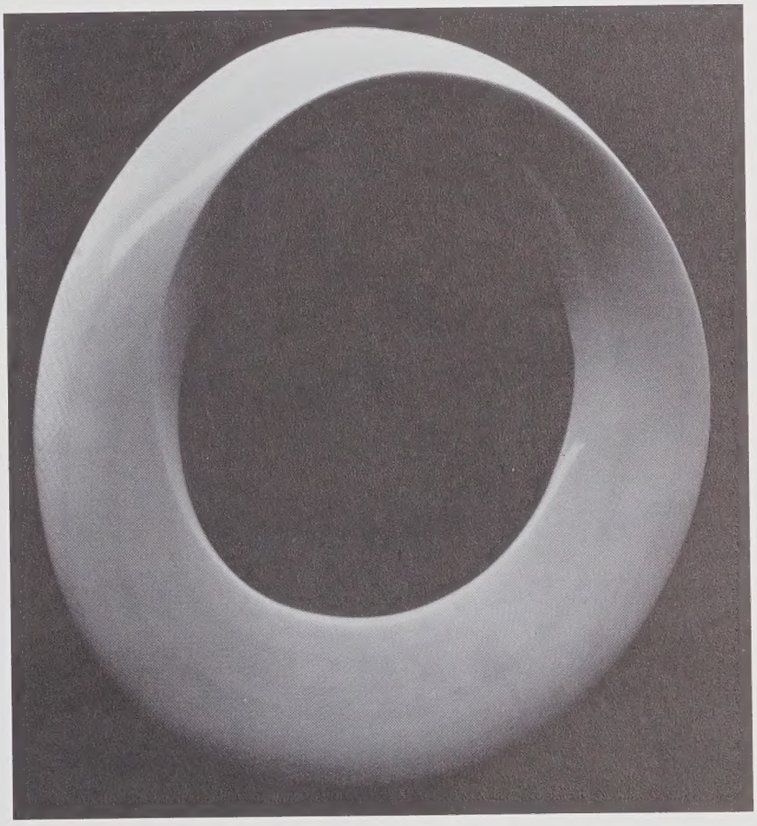


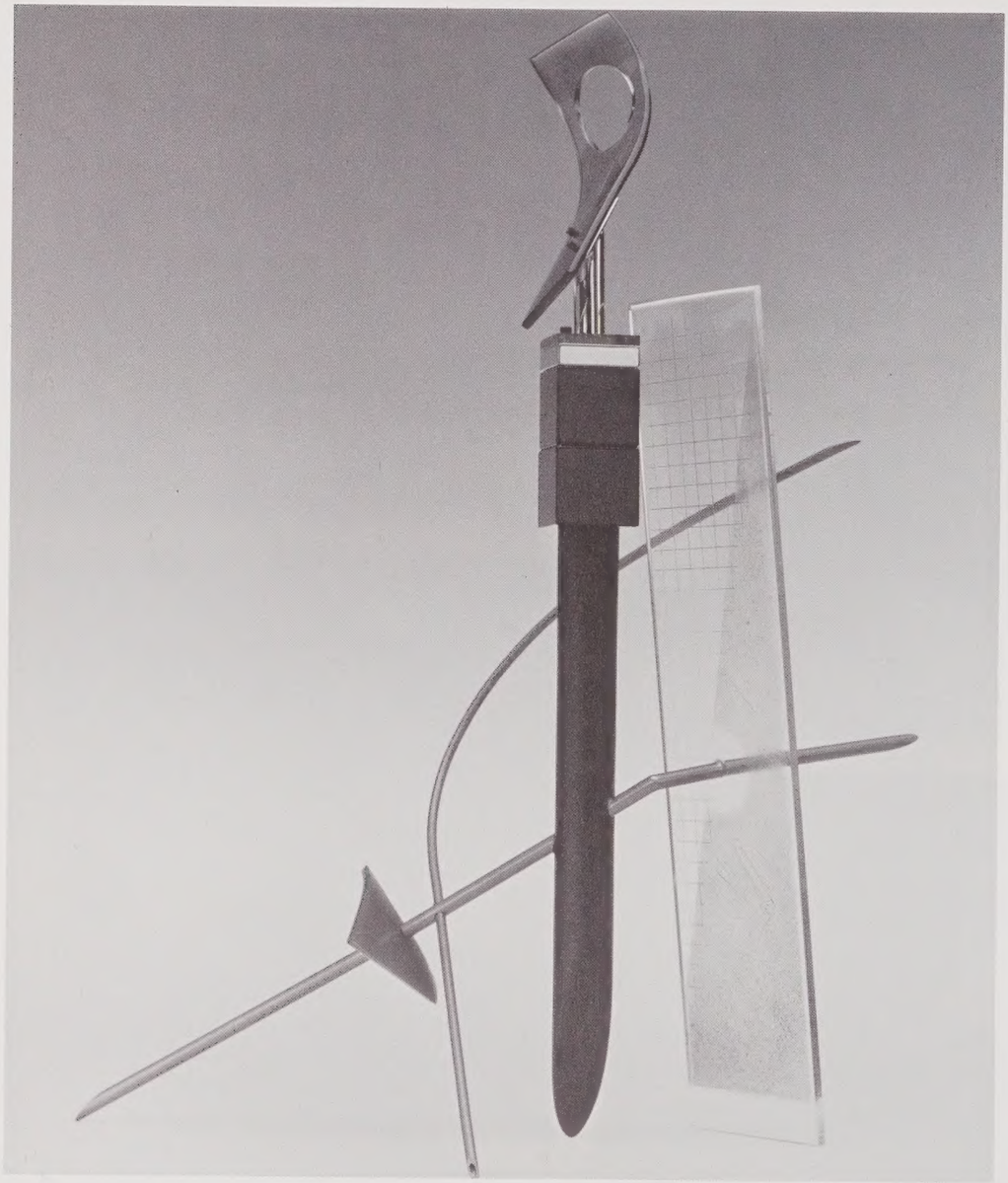












Top: *Crossbow*, acrylic, 24k gold-plated brass and copper, steel, tempered glass vial with ground-glass stopper, 13 × 8 × 8". **Above:** *Tracker*, acrylic, steel, 24k gold-plated copper and brass, 20 × 26 × 16". Photos: Elton Pope-Lance

Charles Kumnick
Color and Light: Acrylic and Metal Forms
New Jersey State Museum, Trenton, NJ
December 7–January 26, 1986
by Katharine S. Wood

Upon entering the South Gallery of the New Jersey State Museum, there was an uncanny feeling of suspended animation. The striking array of Charles Kumnick's latest work seemed to be frozen in mid-motion: a strange and dazzling landscape, an enigmatic still-shot from some alien culture of the future.

On exhibit were 15 structures ranging in height from approximately one foot to over five feet. Composed primarily of acrylic and metal, the work was categorized into functional (perfume containers) and nonfunctional (sculptures). To me, however, all the work was sculptural and the making of some of these sculptures into perfume containers seemed unneccessary—even gimmicky. While I am not against art being functional, the designation of perfume container in this case trivialized the work. I cannot truly see anyone using these pieces in this fashion, but, more importantly, the work is good enough to stand alone without having a contrived purpose to justify its existence.

In general, the pieces are both geometric and architectural. They are all technically superb. The surfaces—whether metal or acrylic, polished smoothly or sandblasted, are meticulous. Moreover, the work is intellectual, for rather than elicit the viewer's emotions, it provokes one to ponder and analyze.

In fact, the pieces are fascinating for their duality. Strong metal forms are juxtaposed with clear acrylic shapes to create contrasting impressions of substance and solidity with airiness and light. This duality is further emphasized by the monochromatic metal underscored by the brilliant colors of the acrylic.

In many pieces, long, thin, steel "rods" are gracefully curved, some thrusting upwards, some tentatively touching ground, while others seem to be moving toward some unknown destination. Indeed, these rods provide a great deal of movement. The first impression of the work is akin to viewing a seemingly still landscape. And yet, if one sits a moment and really looks, the leaves are rustling on the trees, the river is flowing briskly along, ants are scurrying at one's feet . . .

Another interesting element in Kumnick's work is the suggestion of greater dimensions—even the smallest sculptures appear larger and grander. This may be due in part to the verticality of the pieces.

Spinnaker (acrylic, 24k gold-plated brass, sterling silver, glass, and steel) is particularly impressive. A long, transparent glass tube rests on a "mast" of gold-plated brass with a thin, supporting, steel rod of deep mauve. The brilliant jewel-like "sails" of ruby red and sapphire blue acrylic provide balance to the quadrilateral acrylic base, which is partially sandblasted and colored in subtle shades of pink, mauve, blue and purple. *Bishop* (acrylic, 24k gold-plated brass and copper, glass and steel) is a formidable piece, composed largely of slanting triangular planes of deep purple, red and black acrylic. Their angles give an interesting illusion of determined movement. *Pas de Deux* (painted steel, acrylic, brass and copper, rubber) is a large work that focusses on the interaction of two gracefully curved rods, one in steel,the other in clear acrylic; they evoke an image of undulating forms engaged in a tilting dance.

In all, this was a fine show. Kumnick's control of his media is on the highest level and his artistic vision is strong. As an afterthought, many of these sculptures would be particularly effective outdoors, especially if Kumnick continues to do larger pieces. The sunlight would cast a great variety of shadows, changing angles and shapes with the time of day. In addition, the passage of light through the acrylic forms would throw echos of their brilliant colors onto the ground, thus giving the viewer still another dimension to explore.

Heikki Seppä—Form Emphasis
Wichita Art Association, Wichita, KS
February 16–March 16, 1986
by Susan H. Hamlet

The works on exhibit in "Form Emphasis" demonstrated the range of Heikki Seppä's abilities as a metalsmith and jeweler. The main thrust of the show centered around Seppä's well-known shell-formed work, while a selection of jewelry, plus a series of weathervanes was also on view.

In viewing the 17 sculptural pieces, one could not help but be aware of Seppä's significant role in metalsmithing of the past two decades. To his credit, he has established a generic vocabulary of forms (the term "generic" being applied as a neutral means of classification). For the general purpose of communication and education, there is value in the creation of such a system. In utilizing systems, however, the challenge remains for disciples to avoid the pitfalls of thoughtless application and to proceed aggressively from the basis of that system. And to his credit, Seppä remains both reflexive and experimental within his own system.

Without falling prey to the lure of technical virtuosity, Seppä's sculpture does explore personal fantasies through formal concerns. Sleek volumes, linear movement, modulating contour, contrast of rhythm and texture—all constitute his signature style. Seppä's current work divides into two groups, one biomorphic and the other abstract. Of the latter, the piece entitled *DNA* combines successful formal resolution with a tasteful handling of symbolism. Possessing line quality reminiscent of sculptor José de Rivera's whiplash constructions, a scepter cuts diagonally through encircling loops to terminate in a helix composed of a twisted strip dividing two chainlike strands. Two other pieces *Delphinium* and *Lupin* have similar delineation and composition, yet are adorned with tessellated finials. These unique elements, resembling honeycombs, appear to be the result of an expanded metal technique. While strongly alluding to aspects of flora and serving as a vehicle for color, the tessellation cells, painted red and blue, seem at odds with the pure sense of form and the sterling material. Enamels would be more appropriate here, or, perhaps, epoxy resins.

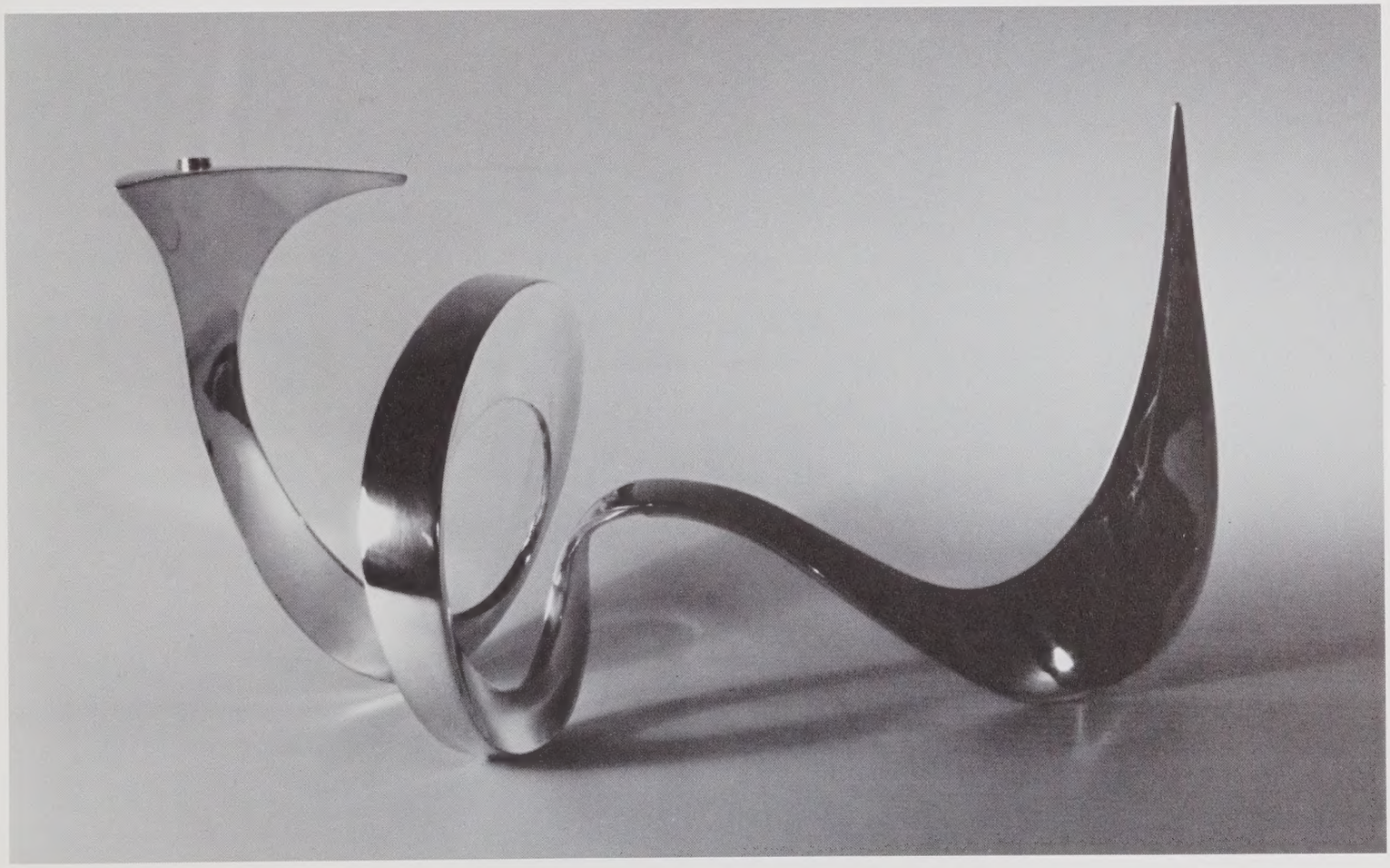
Above: *Delphinium*, sterling silver, paint, 8 × 8 × 8″.
Below: *Xiphoidal Helicoid*, sterling silver, 5 × 10″.

Seppä's work of a more biomorphic nature takes on a great variety of gestures and spatial treatments, prompted no doubt by the urge to explore attenuated volumes and to exercise his vocabulary of forms. One sees the organic and animate in his characteristic sense of flourish, yet in some instances the results become marked by an unbridled ebullience. In *Bi-Furcated Spirodal Form*, the somewhat figurative form steps forward in an exaggerated manner. Even details in the elaborate marriage of metals seem excessive, as well as distracting from the overall reading of form. In general, these pieces do not compare with the clarity of the works previously mentioned. Seppä seems at his best when he controls the temptation to indulge, and stays cool.

In contrast to the streamlined sculptural work, much of the jewelry in this show relied heavily upon textural effects for expression. As the reticulation technique was popularized in this country largely through Seppä's efforts, some of the pieces spoke only in terms of displaying this effect. One sterling bracelet, with truly vigorous reticulation, offered a simple and unquestionable summation of this technique, and in doing so wholly embraced and embodied the convention. Other jewelry pieces related more to aspects of the large-scale work. The one spiculum neckpiece in gold defied expectation by thrusting a large triangular piece of lapis lazuli forward, away from the body, in a startling, if not shocking, stab into space.

The seven weathervanes offered a sharp and pleasing alternative to Seppä's hollow forms. While obviously more modest in scope, "an ephemeral fancy" in Seppä's words, these pieces retain a freshness unlike other labor-intensive works in the show. The weathervanes consist primarily of wire and formed sheet sections with applied paint. Referring to the folk tradition of this format, their subject matter varies from the use of spiraled lines to figurative and birdlike themes. *Rooster* stood out for being more complete through greater use of descriptive detail. Although less "serious," these whimsical, lighthearted pieces warrant further consideration.

While some may claim that we have suffered from overexposure to Seppä's methodical approach, these works evidence a person with a passion for forming processes, and one who retains an essential and valid viewpoint.



Lam de Wolf
Aspects Gallery, London
January 4–February 1, 1986
by Deborah Norton

Over the past two decades, several European artists have rejected the conventional notion of jewelry as decoration in favor of the idea of wearable objects or body sculpture as a means of conceptual expression. The experimentation that resulted from this new approach proved that the boundaries of jewelry are limited only by the designer's imagination. But today, many would agree with Caroline Broadhead's statement in her catalog essay for the exhibit "New Tradition, the Evolution of Jewellery 1966–1985" that, "The last twenty years have nearly exhausted this exciting and important phase of questioning the fundamental nature of jewelery." It is now time for these artists to reassess what they have learned from their investigations and to refine their ideas.

Dutch artist Lam de Wolf's most recent exhibition has proven that she can handle this new challenge with ease. Aided by the fact that her formal training was in textile art, not jewelry, she continues to bring new dimensions to body ornament. Her latest work explores the territory between jewelry and clothing in a far more subtle manner than her earlier outrageous and often shocking inventions. Now, it is the decorative element—her sense of color and movement—that is paramount to her carefully formulated conceptual ideas.

Her neckpieces are a perfect example. From her earlier experiments, de Wolf ascertained that wearable objects could occupy the space around the body, not just on it. Her new neckpieces fill the area between the shoulders and neck. Although her purely conceptual work seemed to challenge the wearer, these pieces flatter her. They are made of three sections of irregularly folded cotton which form stacks of material that are brought together to create a triangular-shaped neckpiece. Twisted streamers of the same fabric, plus some glue, are used to join the ends together, giving the piece firmness but not rigidity. The simplicity of construction reinforces de Wolf's conceptual idea of relying on form, not technique, for expression. The fabric has been sensitively painted in subtle shades so that as the various hues come together they appear to evolve from one another. The resulting sense of movement, enhanced by the flowing streamers and the soft folds, adds vibrancy to her work.

Another highlight of the show was her *Object—Coat*, which builds on the idea of ornamenting parts of the body ignored by conventional jewelry. This piece consists of tubular forms that cover the arms and shoulders, ending at the neck. It is made of a cream-colored fabric with orange and blue stripes, resembling a porch awning. This time, the movement comes from the flowing lines of the stripes and the form itself. Like all of her new work, this piece is soft and feminine yet possesses the same understated humor that was a hallmark of her earlier work. Along with the coat and neckpieces, de Wolf has included several hats in this show that seem more fashion-oriented than anything she has done before.

Standing in the midst of a gallery filled with Lam de Wolf's work, one gets the impression of being on a film set waiting for the action to begin. Because there is such a strong interdependence between the object and the body, her pieces are not fully complete until they are actually worn. Rather than detract from this exhibition, this adds an intriguing element of tension. De Wolf has recently been commissioned by a film director to make costumes for a new movie. This could prove to be the best format yet for displaying her work.

Anne Krohn Graham
Worcester Craft Center, Worcester, MA
October 16–November 16, 1985
by Curtis K. LaFollette

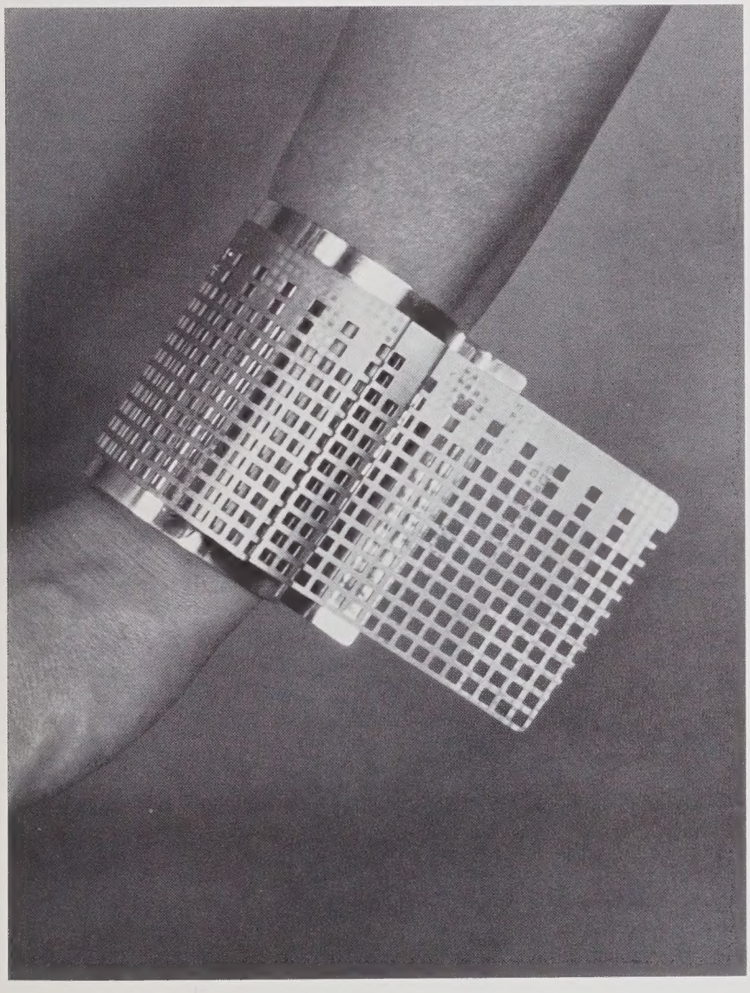
From the exterior, the Worcester Craft Center reminds one of a 60s Polynesian restaurant; missing only the flaming torches. Consequently, it's always a surprise to discover serious studios and gallery spaces inside. Anne Krohn Graham's work was unfortunately crowded into the smaller of the two galleries and several of the cases provided inadequate display.

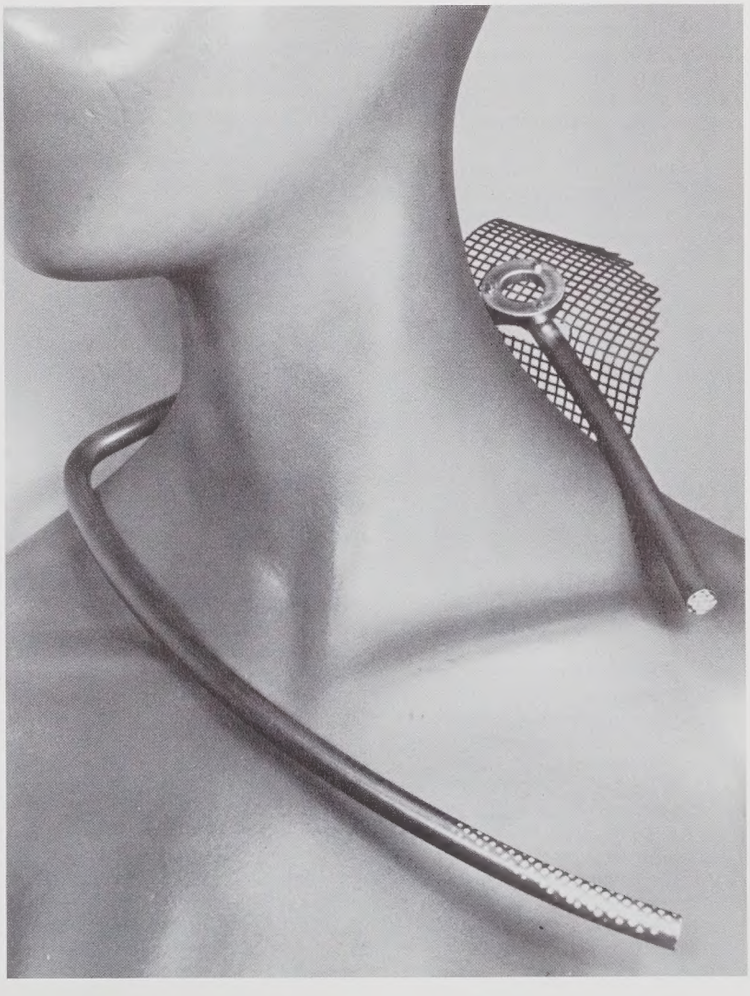
Graham's work, however, was intensely powerful and prevailed over the limitations of the gallery. It was, in fact, refreshing to witness such intelligent use of color. Her colors fit the form and structure of her objects. Color was not used as arbitrary decoration but as an integrated element in the totality of the object.

Her mechanically-joined anodized aluminum and sterling-silver cuff exemplified Graham's stunning integration of modern and traditional materials, as well as a breadth of ingenious solutions in joining them. There is a subtle interaction between modulated pink through red-violet matt aluminum and thin mirrorlike sterling silver. Another drastic departure from traditional jewelry was *Diamond Back*, a very large piece which remains wearable because of its light weight and its ability to interact benignly with the anatomy.

This body of work is in no way the tentative experimentation of an immature worker searching for a trivial, technical substitute for imagination and intelligence. Graham's work is the mature investigation of color, form and structure. Their interdependence powerfully asserts her sophisticated understanding of materials and the social purpose of jewelry which compels her to make art.

Below left: Lam de Wolf, *Neckpiece*, painted cotton. Photo © Hogers/Versluys. **Below:** Anne Krohn Graham, *Diamond Back* torso and waist ornament, anodized aluminum. **Botton:** *Roseate* calfpiece sculpture, anodized aluminum. **Opposite page, above left and right:** *Headpiece/neckpiece*, anodized aluminum. **Below left:** *Flamingo* cuff, anodized aluminum, sterling silver. **Below right:** *Mongoose* neckpiece, anodized aluminum





Books

George Christian Gebelein: Boston Silversmith
by Margaretha Gebelein Leighton, in collaboration with Esther Gebelein Swain and J. Herbert Gebelein
Boston, 1976, privately published, 118 pages, illustrated

For some time metalsmithing literature has been dominated by how-to-do-it books and curator/collector/art historian-oriented studies on jewelry, holloware and decorative metalwork of various periods, places or artists. Except for the pages of *Metalsmith* and occasionally *American Craft*, it is difficult to find much in the way of metalsmithing biography. This is a little strange when one considers that the lives of painters and sculptors occupy shelves and shelves of library space. Sure, we can all name a few metalsmiths whose lives were documented: Cellini, Matthew Boulton, Myer Myers, George Wickes. Yet this type of metalsmithing literature has not received much play, so I pay attention when a biography comes forward.

This book on the life of George Christian Gebelein is a curiosity, because in spite of the historically important period in which he worked (about 1900 to 1945) his traditional style probably caused him to be overlooked by craft writers out to document the significant antecedents of the modern metalsmithing movement. Indeed, the biography was written by his daughters and son, who also had it printed privately. Their motives, no doubt, were more heavily weighted in the direction of honoring their late father and making a place for him in the history of silversmithing than in contributing to the history of silversmithing itself, as would be expected from a presumably objective researcher.

However, though the style of the writing is colored by its purpose, the importance of his biography should not be minimized. Based on a wealth of personal recollections, papers, correspondence, business records and other original sources, this life story provides a valuable, enlightening and detailed insight into the training, professional growth, working methods, business practices, esthetic philosophy, workshop arrangements and artistic achievements of a silversmith who practiced during a period that many of us may picture as a wasteland in the crafts landscape that lay between the colonial/federal period and the post-World War II crafts renaissance.

George Gebelein apprenticed in Boston at age 14 in 1892, worked at Tiffany's for a time and returned to Boston, where he joined a craftsmen's cooperative workshop and became active in the local William Morris-inspired Society of Arts and Crafts. Eventually Gebelein established his own business in Boston (now run by his son, J.H. Gebelein).

Gebelein executed a number of significant commissions, among them the silver service for the aircraft carrier Lexington, the communion service at West Point and a number of athletic trophies. His many other important works are also described.

Gebelein's working style paralleled that of the 18th-century silversmiths he so much admired. He used their tools and methods, avoided mass-production techniques, avoided catering to a mass market and related to his clients on a one-to-one level. He enjoyed associating with other craftsmen, collectors, curators and students. He became a collector and authority on antique silver in his own right. The personal trait that consistently shines through in this book is integrity, and a young silversmith seeking a role model might find one in Gebelein.

Although Gebelein was working during the period when the decorative arts were undergoing revolutionary changes, his designs reveal that he was not a pioneer in the Modern Design movement. His designs are derivative but not direct copies of 18th-century silver, and a contemporary craftsman may find grounds for complaint in this. However, given the stylistic path he chose to follow, his pieces were elegantly proportioned and very competently made. One interesting excursion Gebelein made into the style of his time took place in 1907, when he created a series of forms he called the "melon style," which faintly reflected the organic themes of Art Nouveau.

The book includes a discussion of Gebelein's home life and childhood, his training, the history of his business, his way of doing business, his relationship with workers, descriptions of his important pieces and his awards, exhibitions and other evidence of recognition. There is no index but there is a description of his marks, a list of his employees and associates between 1911 and 1945 and a section of notes and comments This is an important book in any collection on the history of the metalsmithing craft. Anyone interested in learning more about the man author Kenneth Roberts has referred to as the "Modern Paul Revere" will probably be able to buy the book directly from the printer, though it is possible that it is for sale at Gebelein Silversmiths, Inc., 286 Newbury Street in Boston, MA.
—Bernard Bernstein

Introduction to Precious Metals
by Mark Grimwade
Newnes Technical Books, Butterworth & Co. Publishers, London, 1985, 130 pages, £8.50

Sooner or later, just about every metalsmith uncovers a friendly scientist who can answer technical questions. These kindly souls usually start by saying this is not their field, but they had a basic course in college and can help track down the elusive bit of information. It took me years to find my advisors, but now, thanks to Mr. Grimwade's dandy book, you don't have to.

The book grew out of lectures presented by the author at the City of London Polytechnic, where he specializes in presenting scientific material to artists. It is clear that the author understands the needs and level of his audience. The book makes serious and valuable inroads into topics like refining, the chemical and physical aspects of metals, annealing and joining. Gold, silver and platinum are each given a chapter. Through phase diagrams, photomicrographs and lucid explanations, the precise world of the metallurgist unfolds.

The inherent difficulty of a scientific book for laymen is knowing when to stop. The author shows a deft hand at this, presenting sufficient material for a meaningful appreciation of what's being described. At the same time the text is kept light enough that no one need be scared off.

Some chapters like those dealing with hallmarking and industrial uses of precious metals have little relevance for American studio metalsmiths. But then they add to the completeness of the book and do no harm. For the modest price, I think most metalsmiths and certainly every school should pick this one up.
—Tim McCreight

Technical Briefs

A question that often arises in our studio concerns the expansion and contraction of ivory set within a metal piece. What is a recommended glue? What about rivets? Bezels? Any other tips?
Sharon Church, Philadelphia College of Art

Dear Sharon,
The degree of expansion in a piece of ivory depends on several factors: the overall mass of the sample, the relationship of thick sections to delicate sections and the range of temperature and humidity to which the piece is exposed. If all these factors are moderate, for instance if the temperature and humidity are stable, the risk of expansion and subsequent cracking is reduced.

End-grain pieces are much more likely to absorb moisture (and therefore crack) than are side-cut pieces. Large pieces of ivory should be sealed on their end grain with a waterproof coating such as wax. In most applications, pieces are made small enough that cracking is unlikely. Still, it's a good idea to seal the ivory to make it less susceptible to damage from moisture. Plastics (e.g., clear acrylic spray) or oils are commonly used. Any light oil, from WD40 to mineral or baby oil, will do. I've also heard good things said for Vitamin E as a restorer and preservative.

Contraction, rather than expansion, is the more probable risk in a finished piece of ivory. If a piece is glued, I recommend a flexible glue such as the silicone-based adhesives used in plumbing. These are available in most hardware stores.

Bezel setting is a practical solution. If the ivory contracts, the bezel is simply pressed down further. Foreknowledge of this predicament should dictate the making of a bezel with sufficient height to allow for this.

Rivets are a practical solution for holding ivory into a piece, but certain allowances should be made. Rivets in an end-grain piece are an invitation for cracking. Avoid using a large number of rivets that encircle a piece. A ring of fixed points does not allow for the movement of the ivory as it contracts. Fewer rivets, or a combination of rivets and a retaining wall, would be a safer solution.

And while we're on the subject, here is a little more information about ivory. The word refers to any tooth material, for instance that of walrus, elephant or whale. Most of the ivory used in jewelry is from elephants' tusks and is characterized by the spiral crosshatching seen in the end-grain. Most of the ivory on the market today comes from the Botswana Game Preserve, where it is obtained from government-supervised herd control.

When working ivory, wear a respirator to avoid breathing the dust. Power machines have a tendency to burn the ivory, causing discoloration and hairline cracks on the surface that diminish the luster of the material when polished. To avoid this, use bare hands and never let the ivory get hot to the touch, or use hand tools.

Ivory is worked with files and sandpaper just like metal. As with metals, it is important to progress methodically through the sequence of abrasives, usually going to a 400 or 500 grit paper. Polishing is done with white diamond, tripoli, white rouge or similar compounds on a buff used only for ivory.

The piece can be washed with a gentle soap but should be guarded against rapid drying. Don't, for instance, soak it then set it on a radiator. Don't clean ivory in an ultrasonic machine. The ammonia and detergent will replace the oil in the ivory and might cause it to crack.

Send questions for this column (double-spaced, typewritten) to: Tim McCreight, 23 Mill Road Circle, Boylston, MA 01505.

Letters Cont.

a modest $20,000 (assuming an average 20 "lines" represented) for simply existing! Feldman felt that this process would weed out the undedicated jewelry/accessories designers and force those remaining to be more businesslike." Perhaps we should give her model contract a very careful look to see just whom it protects.

Basically our point is this: artists and reps need each other in order to succeed in the increasingly competitive fashion field. Reps must cover the business details while understanding their products; designers must be free to create without the burden of groveling for respect and compensation. Something is very wrong when our conditioned response to prompt payment and constructive buyer feedback is that of astonishment and gratitude.

Given their cumulative years of experience, business-oriented backgrounds and relatively little *superior* competition, it is sad that more reps and galleries are not doing marvelously well both for new jewelry designers and, thereby, themselves.
—Names withheld by request

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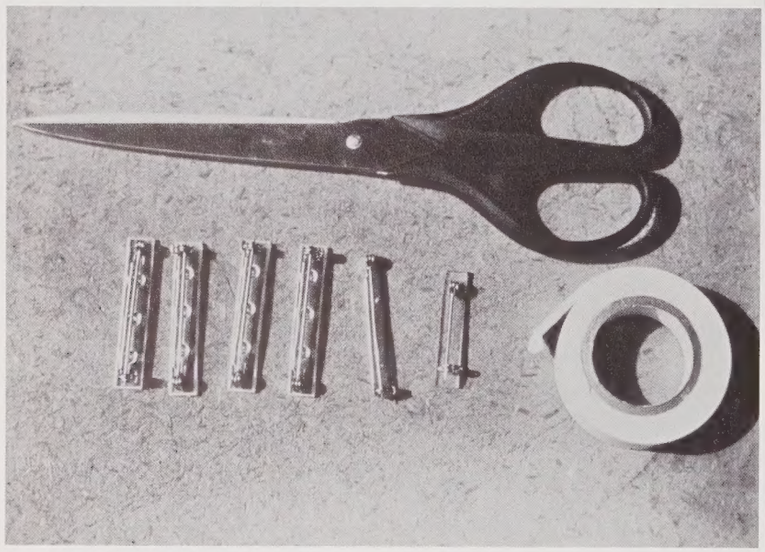

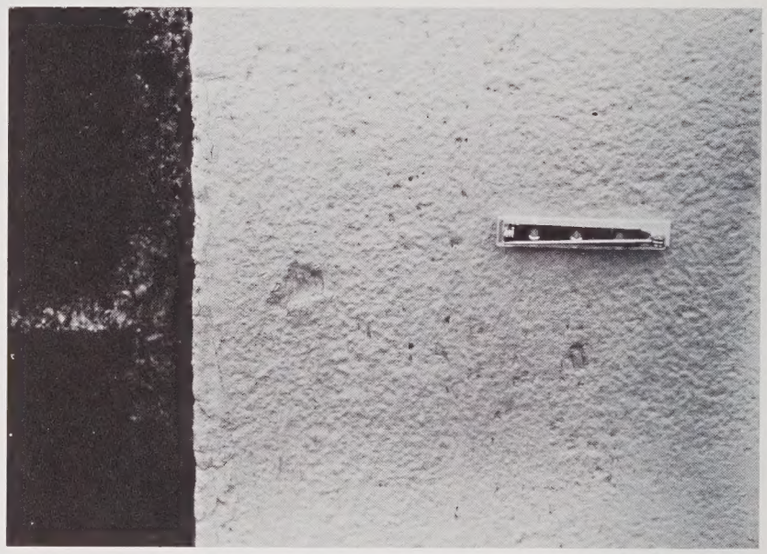

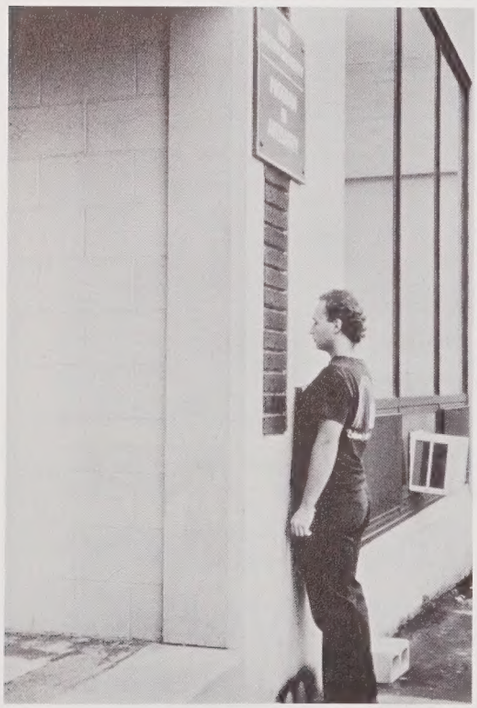

C.Sanford, Alan Paz

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The Society of North American Goldsmiths (SNAG) was formed in 1970 to promote contemporary gold- and silversmithing. SNAG serves as a forum for the free exchange of ideas in the field.

Technical information, esthetic and educational issues, and other topics of interest to the practitioner and teacher of contemporary metalwork are disseminated by SNAG publications and conferences. Professionals and students, collectors, gallery owners and enthusiasts will all find SNAG interesting and useful. From pure sculpture to production jewelry, SNAG offers information on the entire range of the exciting field of metalsmithing.

Services

Each year, SNAG conducts a conference that attracts jewelers and silversmiths from all over the world. Major figures in the field speak on a multitude of topics. Each conference is held in a different location to allow the widest audience possible access to these lively and stimulating gatherings.

Periodically, SNAG sponsors major exhibitions of contemporary metalwork. In the past, SNAG shows have been mounted at the Renwick Gallery, the St. Paul Museum of Art and the Phoenix Museum of Art. A special exhibition of work by Distinguished Members traveled to major museums in Europe in 1979.

The Society operates a book ordering service, through which important texts on all aspects of the field can be ordered at a reduced price.

SNAG also operates a slide library and rental service, which contains the portfolios of Distinguished Members and other notable metalsmiths. Members can rent or purchase slides at minimal cost.

Publications

Metalsmith is the only magazine in America devoted solely to the metal arts. Prominent jewelers and designers, silversmiths, blacksmiths and sculptors are featured in full-length articles. Process and technique are explored in essays on design and production, materials and equipment. Regular columns by leading authorities discuss the latest gallery shows, newest books and current museum exhibitions.

The Newsletter is published bimonthly and is available to members only. It features timely information on exhibitions, workshops, conferences and job opportunities from all across the U.S. and Canada.

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SNAG offers several types of memberships, each tailored to a specific level of involvement in the field of contemporary metalsmithing.

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Metalsmith

The Quarterly Magazine Devoted to the Development and Appreciation of the Metal Arts

Traditions of Metalwork
Historical articles trace the roots and development of metalwork in the styles and artists of the past.

Materials & Methods
An inside look at the precious and nonprecious materials and the unique methods of metalsmithing and jewelry.

Showcase of Contemporary Work
Each issue will seek out and explore significant new work in the fields of jewelry, enameling, holloware, blacksmithing and sculpture.

Masterpieces in Metal
Curators of well-known museums and collections from around the world examine important works, commenting on their technical, historical and esthetic significance.

Exhibition Reviews
Each issue selects the most important shows for review. The emphasis is on a visual presentation of the major pieces and a critical appraisal of their contribution to the contemporary body of work being created in the field.

Business, Marketing and Education
- Where to find summer workshops and programs in metal
- How to market through galleries, stores and direct mail
- What books and other literature to read
- How to avoid health and safety hazards
- Where to get supplies
- How to photograph your work
- How and when to enter competitions
- How to establish your own retail business
- How to evaluate craft fairs

Master Metalsmiths
In-depth profiles of eminent metalworkers examine their contribution to and influence on the state of the art. They are the designers, teachers, artists of today, whose work is sought by collectors and admired by craftsmen.

Since **Metalsmith** is a quarterly, please allow 8 to 10 weeks to receive your first copy.

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MEMBERSHIP

SOCIETY OF NORTH AMERICAN GOLDSMITHS

The Society of North American Goldsmiths (SNAG) was formed in 1970 to promote contemporary gold- and silversmithing. SNAG serves as a forum for the free exchange of ideas in the field.

Technical information, esthetic and educational issues, and other topics of interest to the practitioner and teacher of contemporary metalwork are disseminated by SNAG publications and conferences. Professionals and students, collectors, gallery owners and enthusiasts will all find SNAG interesting and useful. From pure sculpture to production jewelry, SNAG offers information on the entire range of the exciting field of metalsmithing.

Services

Each year, SNAG conducts a conference that attracts jewelers and silversmiths from all over the world. Major figures in the field speak on a multitude of topics. Each conference is held in a different location to allow the widest audience possible access to these lively and stimulating gatherings.

Periodically, SNAG sponsors major exhibitions of contemporary metalwork. In the past, SNAG shows have been mounted at the Renwick Gallery, the St. Paul Museum of Art and the Phoenix Museum of Art. A special exhibition of work by Distinguished Members traveled to major museums in Europe in 1979.

The Society operates a book ordering service, through which important texts on all aspects of the field can be ordered at a reduced price.

SNAG also operates a slide library and rental service, which contains the portfolios of Distinguished Members and other notable metalsmiths. Members can rent or purchase slides at minimal cost.

Publications

Metalsmith is the only magazine in America devoted solely to the metal arts. Prominent jewelers and designers, silversmiths, blacksmiths and sculptors are featured in full-length articles. Process and technique are explored in essays on design and production, materials and equipment. Regular columns by leading authorities discuss the latest gallery shows, newest books and current museum exhibitions.

The Newsletter is published bimonthly and is available to members only. It features timely information on exhibitions, workshops, conferences and job opportunities from all across the U.S. and Canada.

Membership

SNAG offers several types of memberships, each tailored to a specific level of involvement in the field of contemporary metalsmithing.

General Membership is open to everyone and includes subscriptions to *Metalsmith* and the SNAG Newsletter, reduced conference fees, access to all of SNAG's services and full voting privileges.

Distinguished Membership is a special juried category, which is conferred upon members who demonstrate outstanding contribution to the field. Special exhibitions and other privileges are available to these members. This category of membership includes all publications and other advantages described above.

Student Membership is offered at a reduced rate to anyone attending an accredited educational institution. This membership offers all the advantages of a *general membership* but does not carry voting privileges.

Institutional Membership is available for nonprofit organizations like schools and libraries. Institutions receive four issues of *Metalsmith* magazine per year.

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